

CANADA

REPORT

OF THE

MINISTER OF PUBLIC WORKS

ON THE

WORKS UNDER HIS CONTROL

FOR THE

FISCAL YEAR ENDED MARCH 31

1910

*Submitted in accordance with the Provisions of Chapter 39. Section 34,
of the Revised Statutes of Canada.*

PRINTED BY ORDER OF PARLIAMENT



OTTAWA

PRINTED BY C. H. PARMELEE, PRINTER TO THE KING'S MOST
EXCELLENT MAJESTY

1910

*To His Excellency the Right Honourable Sir Albert Henry George, Earl Grey,
G.C.M.G., &c., Governor General of Canada.*

MY LORD,

I have the honour to lay before Your Excellency the Report of the Department of Public Works of Canada, for the fiscal year ended March 31, 1910.

I have the honour to be,

My Lord,

Your Excellency's most obedient servant,

WILLIAM PUGSLEY,
Minister of Public Works.

OTTAWA, October 15, 1910.

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| " " reports..... | | | | | 1 | | |
| " " revenue..... | | | | | 13 | | |
| " " staff..... | | | | | 4 | | |
| Tenescap, N.S..... | | 18 | | | | | |
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| Tessier, Napoleon..... | 15 | | | | | | |
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| Tilsenburg, Ont., post office..... | | 12 | | | | | |
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| Tracadie, N.B..... | | 21 | | 76 | | | |
| Traverse, N.B..... | | 21 | | 196 | | | |
| Treadwell, Ont..... | | 26 | | | | | |
| Trent and Newcastle slides..... | | 28 | | 360 | | | |
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| Walkerton, Ont., public building | | 12-37 | 30 | | | | |
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| Wallaceburg, Ont. | | 26 | | 160-252 | | | |
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| Wapskehegan, N.B. | | 20 | | 69 | | | |
| Worsfold C. C. compensation | | 30 | | | | | |
| Washago, Ont. | | 26 | | 154 | | | |
| Washabuck, N.S. | | 18 | | | | | |
| Waterboro, N.B. | | 20 | | | | | |
| Waterloo, Ont., public building | | 12 | | | | | |
| Waterways Commission | | 30 | | | | | |
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| Welchpool, N.B. | | 21 | | 76 | | | |
| Welland, Ont., public building | | 12-37 | 30 | | | | |
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| " " Farnham, P.Q., public buildings | | 34 | | | | | |
| " " Head, N.S. | | 18 | | | | | |
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| " " public building | | 12-37 | 30 | | | | |
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| White Mud River, Man. | | 27 | | 338 | | | |
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| Willow Creek, cattle quarantine | | 14 | | | | | |
| Wilson's Beach, N.B. | | 21 | | | | | |
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| " " Beach, Man. | | 26 | | | | | |
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PART I

REPORT

OF THE

DEPUTY MINISTER OF PUBLIC WORKS

FOR THE YEAR ENDED MARCH 31

1910

REPORT

OF THE

DEPUTY MINISTER OF PUBLIC WORKS

FOR THE

FISCAL YEAR ENDED MARCH 31, 1910

DEPARTMENT OF PUBLIC WORKS,

OTTAWA, October 18, 1910.

HON. WILLIAM PUGSLEY,
Minister of Public Works of Canada,
Ottawa.

SIR,—I have the honour to submit herewith the annual report of the Department of Public Works for the fiscal year ended March 31, 1910.

Owing to the world-wide depression which occurred during the year 1908 from which Canada to some extent suffered and which resulted in a contraction of business throughout the country and a subsequent falling off in the revenue, it was prudently decided to postpone the execution of as great a number of public works as conditions warranted and a very large reduction, amounting to nearly seven million (\$7,000,000) was accordingly made in the appropriations of the department for the year under review.

Canada, however, recuperated very rapidly and apparently was less affected by the trade depression than almost any other country. Commercial and manufacturing interests quickly recovered from the embarrassment which, for the time being, retarded their progress and the revenues of the country soon gave evidence of improved conditions and shortly became more buoyant than ever with the result that development is again proceeding briskly along all lines.

EXPENDITURE.

During the fiscal year 1909-10, the total expenditure of the department in the different divisions of departmental operations was \$11,342,365.29, made up as follows:—

| | |
|-----------------------------|------------------------|
| Harbours and Rivers.. . . . | \$ 3,207,233 59 |
| Dredging, plant, &c.. . . . | 3,669,030 18 |
| Slides and Booms.. . . . | 159,564 64 |
| Roads and Bridges.. . . . | 30,734 61 |
| Public Buildings.. . . . | 3,478,508 07 |
| Telegraphs.. . . . | 448,649 70 |
| Miscellaneous.. . . . | 348,644 50 |
| Total.. . . . | \$11,342,365 29 |

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It will be noted that the department falls into three main divisions with, as it happens in the present year, practically the same outlay in each. That of dredging shows the largest increase. The expenditure on contract dredging, and the purchase, maintenance and operation of the departmental plant having grown from \$680,092.31 in 1899, to the sum above mentioned. No more valuable illustration could be had of the rapid development of the country's commerce, which has necessitated a steady increase in the size and tonnage of vessels, to provide for the increased draught of which has been a constant strain on the resources of the department.

REVENUE.

The revenue for the year, \$515,421.55, is made up from the following sources:—

| | |
|----------------------------|--------------|
| Slides and Booms.. | \$ 71,667 20 |
| Graving Docks.. | 45,816 92 |
| Rents.. | 45,138 61 |
| Telegraph Lines.. | 136,747 31 |
| Casual Revenue.. | 186,514 92 |
| Total.. | \$485,884 96 |

There has been an increase in the slide and boom dues owing to a great many logs coming through this year which were held up last season on account of the low water, and owing to an unfavourable market. A decrease is noted in the returns from the graving docks which, however, cannot be said to be a regrettable feature.

A substantial increase is shown in telegraphs and casual revenue. The latter appears very large, but this is owing to the payments made by the government of the province of Saskatchewan for lands and buildings purchased from the federal government by that province.

While on this subject, I desire to direct special attention to an article written by Mr. E. T. Smith, Collector of Public Works Revenue, which will be found in Part 6, of this volume. It comprises a very excellent historical sketch of the square timber trade which, I am sure, will prove most interesting to all engaged in the lumber industry and especially to those of the Ottawa valley with which section it more particularly deals. Mr. Smith outlines the government policy with regard to timber under the French regime and, later on, under British rule. Both governments, in those early days, seemingly did not esteem the vast forest wealth of any considerable value other than as it might serve for the erection of fortifications and barracks and the purposes of the Royal Navy. It was not until the year 1807, when the Home Government granted to 'Contractors for the Royal Dock Yards,' licenses to cut timber in Canada, that the general business of supplying the British market sprang up.

Early in the 19th Century, pioneers of the lumber industry directed their attention to the stretches of magnificent timber in the Ottawa district. Reference is made to the steady progress of the axemen up the Ottawa and its tributaries, and it was not long before the improvement of the river for log driving purposes became necessary. The first timber slides were built by private parties, but later on the government came to the assistance of the industry and constructed a number of works.

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The method of floating the timber down to Quebec and shipping it there is graphically described. That city was, fifty years ago, the busy centre of the export trade. Conditions gradually changed, however, and the coves west of the city and the flats opposite where the timber was prepared and loaded, became deserted. The trade in hewn timber steadily diminished, and this particular form of the product of the forest, so far as the district of Ottawa is concerned, seems to have almost disappeared. I would bespeak a careful reading of Mr. Smith's report which will well repay perusal.

PUBLIC BUILDINGS.

Owing to the curtailment of the department's appropriations, very few buildings were placed under contract during the year. They were:—Bathurst, Sask., immigration building; Pierreville, Que., public building (purchased and fitted up); Prince Albert, Sask., penitentiary workshop; Rimouski, Que., armoury.

A goodly number, however, the construction of which had already been got under way, were successfully completed. Following is a list of these:—

Nova Scotia.—Bridgewater, public building; Glace Bay, public building; Shelburne, public building.

Prince Edward Island.—Georgetown, public building.

Ontario.—Glencoe, public building and armoury; Kingston Military stables; Kincardine, public building; Markham, public building; Peterboro', drill hall; Strathroy, armoury; Simcoe, public building, and Toronto, Observatory.

Quebec.—Cookshire, public building; Magog, public building; Plessisville, public building; Joliette public building; Montreal, Postal Station 'D'; Sherbrooke, drill hall.

Manitoba.—Dauphin, public building; Neepawa, public building.

Alberta.—Edmonton, public building; Yorkton, public building.

British Columbia.—Vancouver, public building.

Since reference was made thereto in the last annual report, a change has been made in the location of the new departmental building to be erected on Sussex street. The original intention was that it should extend over Mackenzie Avenue a few feet into Major's Hill Park, but owing to the extension to the driveway under construction by the Ottawa Improvement Commission, it was decided not to encroach upon the park but to adopt the line of the Rea department store, leaving the present Mackenzie Avenue to form part of the driveway which is being brought along the Ottawa river in the rear of the Royal Mint and the Archives building and around the face of Nepcan Point. This change necessitated the redrawing of the plans, but the work is now well on towards completion and it is expected that everything will be in readiness to make a call for tenders towards the latter part of the present year.

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DREDGING.

The operations of this branch of the department have increased enormously during the past few years, due to the necessity of providing accommodation for the large modern freight carriers to which every inch of additional draught means tons of additional freight. Therefore, every inch added to the available depth of water has its direct effect upon the volume of water-borne commerce. The usual method heretofore employed for deepening channels has been that of excavation and this is, of course, the only method in the case of maritime harbours. On the inland lakes and rivers, however, considerable study has recently been given to a more economical and better method; that is, to raise the surface of the water by means of dams and controlling works at the outlets, thus establishing reservoirs for the storage of the surplus waters which come down in the spring so that later on they may be gradually released to increase the low water flow in time of deficiency. The department has now in hand improvements of this nature to which reference will be made later on.

As will be remarked, the expenditure under the heading of 'Dredging' now amounts to nearly one-third of the total outlay of the department. This covers dredging contracts and the purchase, maintenance and operation of the plant owned by the department.

Prior to 1870, very little dredging was required, but in 1873, dredging operations were begun in a systematic manner with an initial expenditure of \$40,000. As years rolled by, and the country became more thickly populated, as manufacturing grew and commercial routes began to establish themselves, the need for deeper harbours and improved channels claimed public attention. In 1885, the department owned and operated 13 dredges and 1 stone lifter, and one dredging contract was awarded; the total expenditure on dredging for that year being \$113,000. In 1895, the department owned and operated 16 dredges, 1 stone lifter, and 1 snag boat, exclusive of the ship channel fleet, and had 2 dredges and 1 tug under construction. The expenditure in that year amounted to \$214,000. In 1905, the department owned 22 dredges, 1 snag boat and 5 tugs, and the number of dredges employed under contract was 33. The expenditure had increased to \$1,000,000. In 1909-10, the department had 42 dredges, 6 stone lifters, 1 snag boat, 21 tugs and the outlay for contract and departmental dredging amounted to \$3,669,030.18, which amount, owing to it being a year of retrenchment, was almost one million less than the sum similarly expended during the preceding year.

Work was carried on at the following places:—

Nova Scotia.—Cheticamp, Digby, East River-Pictou, Fourchu, Liverpool, Mulgrave, North Sydney, Petit de Grat, Pictou, Port Mouton, Red Island, Skinner's Cove, South Ingonish, St. Mary's River, Sydney Harbour and Yarmouth.

Prince Edward Island.—Charlottetown, Georgetown, Pinette, Pownal, Souris, Summerside and Vernon River.

New Brunswick.—Bathurst, Campbellton, Caraquet, Dalhousie, Gaspereaux river, Hampton, Heron Island, Jenkins Cove, Leonardville, Loggieville, Miramichi, Oromocto, St. Andrews, St. John harbour, Shampers, Tabusintac and Traverse.

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Quebec.—Aylmer, Berthierville, Caughnawaga, Doucet's Landing, Grenville, Hudson, Ile du Pads, Ile Madame, Lake Timiskaming, Louiseville, Notre Dame de la Salette, Ottawa river, Papineauville, Pierreville, Quebec harbour, Rigaud, Rimouski, River Batiscan, River du Lièvre, River du Loup, River l'Assomption, River Richelieu, River St. Francis, River St Maurice, Roberval, St. Jean des Chaillons, St. Michel de Bellechasse, St. Pierre les Becquets, St. Placide, Saguenay river, Sorel, Vaudreuil, Verdun, Ville Marie, Yamachiche and Yamaska river.

Ontario.—Belleville, Bowmanville, Brockville, Cobourg, Fort William, Frenchman's bay, Garden Island, Goderich, Hamilton, Hawkesbury, Kincardine, Kingston, Kingsville, Little Current, L'Orignal, Matchedash bay, Midland, Napanee, Newcastle New Liskeard, Niagara, Nipigon river, Ottawa river, Owen Sound, Pelee island, Point Edward, Port Arthur, Port Burwell, Port Colborne, Port Hope, Port Stanley, Rainy river, Restoule bay, Rideau river, River Otonabee, River St. Lawrence, Rondeau harbour, St. Clair river, Sault Ste. Marie, Sturgeon Falls, Sturgeon river, Sydenham river, Telegraph and Nigger islands, Thessalon, Toronto, Victoria harbour, Wallaceburg, Whitby and Wingfield Basin.

Manitoba.—Brokenhead river, Grand Marais, Gypsumville, Icelandic river, Mossy river, Oak Point, Red river, Selkirk, Siglunes, Swan creek and White Mud river.

Saskatchewan.—North Saskatchewan river.

British Columbia.—Columbia river, Coquitlam river, Fort George canyon, Fraser river, Ladner, Naas river, Nanaimo, Okanagan river, Skeena river, Thompson river, Vancouver, and Victoria.

From the length of the above list, some idea will be had of the extent of the demands made upon the department for dredging, and it is becoming more difficult every year to keep pace with the requirements. [Comparatively few years ago, 14-foot navigation was ample for all needs, but now, 20, 22, and in the larger ports, 25 feet are required.] In addition to the ordinary and natural silting in of harbours and rivers, larger vessels, both passenger and freight, of much deeper draught are now being constructed. Of the ocean steamships, the Canadian Pacific Railway Company's 'Empresses' have a length of 548 feet, breadth 65 feet, depth 36 feet, with a gross tonnage of 14,189. The dimensions of the White Star steamer *Laurentic* are: length 550 feet, breadth 67 feet, depth 41 feet, gross tonnage 14,892; and the Allan line have recently called for tenders for a new 22,000 ton passenger boat.

On the Great Lakes, there has been a wonderful development in connection with the grain and iron ore carrying trade. In 1890, a vessel 310 feet long with a carrying capacity of 4,000 tons was considered a pretty fair-sized ship, but by 1900 there had been an increase to a length of 474 feet, carrying 9,000 tons; while the year 1909 saw vessels in use 605 feet long and capable of carrying 12,000 tons based on a draught of about 19 feet.

Much additional dredging on the Great Lakes has been rendered necessary through the lowering of the water level especially on Lake Huron. Although to some extent this is doubtless owing to the diversion of the Chicago Drainage canal, in all probability the main cause is to be found in the improvements which have been made in the Detroit river.

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During the winter, a new suction dredge called the *Nereus* was acquired for service in the maritime provinces. The dredge is 159 feet 3 inches long and has a beam of 28 feet. Her hopper capacity is 513 yards and the draught, when loaded, between 13 and 14 feet. The dredge is also fitted for night work, having a full electrical equipment including a searchlight. She was purchased at Galveston, U.S.A., and after being overhauled and put in working order at Halifax, after the long sea voyage, was sent to Bathurst, N.B., where she is at present engaged in the improvement of the entrance to that harbour.

Among the places where work has been carried on, special mention may be made of the progress of the improvements under way at Fort William, Victoria Harbour and Tiffin.

At Fort William, access can now be had to the new Grand Trunk Pacific 3,500,000 bushel elevator which will be in use this fall, there being now available a through grain route from Edmonton to Fort William over the Grand Trunk Pacific railway and National Transcontinental tracks.

The Canadian Pacific Railway elevator at Victoria Harbour will be completed and ready for the reception and handling of grain this autumn. A channel thereto, 125 feet wide and 1,600 feet long, will, by that time, have been dredged.

Grain was handled last year at the Grand Trunk Railway elevator at Tiffin and dredging has continued there throughout the season to provide the necessary depth and width of channel.

HARBOURS AND RIVERS.

Under this heading the department expended the sum of \$3,207,233.59. Works were completed during the year at the following places:—

Nova Scotia.—Blue Rocks, breakwater; Cape North, breakwater; Osbornes, breakwater; Minasville, breakwater; Mira river, wharf; Owls Head, wharf; Port Hastings, wharf; Spry harbour, wharf; Sydney, wharf, and Tupperville, wharf.

Prince Edward Island.—Summerside, breakwater; Vernon river, pier.

New Brunswick.—Beaver harbour, wharf; Lorneville, wharf; North Head, wharf; Burton Court House, wharf; Lower Jemseg, wharf; Newcastle, wharf; St. Andrews, wharf; Scotchtown, wharf; The Range, wharf; Youngs Cove, wharf; Seal Cove, breakwater; Welchpool, wharf, and Whitehead, wharf.

Quebec.—Cap St. Ignace, wharf; Pointe à Elie, pier and breakwater; Pointe aux Trembles (en haut), wharf; St. Denis, wharf; St. Eloi, wharf, and St. François du Lac, wharf.

Ontario.—Arnprior, wharf; Bewdly, wharf.

British Columbia.—Union bay, wharf.

There are at present in process of construction, the following:—

Nova Scotia.—Annapolis river, ice piers; Voglers Cove, wharf.

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New Brunswick.—Cape Bald, wharf; Cummings Cove, wharf; Gautreau, wharf; Steeves Landing, wharf; Harvey Bank, wharf; Leonardville, wharf; Lower Caraquet, wharf and St. John, extension to Sand Point wharf.

Quebec.—Chicoutimi, wharf; Quebec, wharf.

Ontario.—Port Arthur, breakwater; Mission river, wharfage; Toronto, western entrance.

At Quebec, the Etienne Dussault Company, Limited, have made good progress during the season with the Pointe à Carcy wharf, and the demands of traffic will doubtless before long necessitate making provision for a series of slips up the St. Charles river.

The new deep-water wharf at Levis has also been placed under contract with the above named contractors and work thereon has been commenced.

At St. John, N.B., the dredging on the western side of the harbour has been continued and there is now sufficient space prepared for the construction of several additional shipping berths. The contract for the extension of the Sand Point wharf is almost completed and tenders are at present being called for the erection thereon of a suitable warehouse which will be pushed forward for the business of the coming winter. This year the outlook is very bright for a heavy transatlantic trade through this harbour.

The construction of the new western entrance to Toronto harbour, placed under contract with Mr. R. Weddell in May of 1908, at a cost of \$495,000, has progressed very satisfactorily. The new works consist of two parallel piers 400 feet apart about 220 feet south of the present western channel. The north pier is 2,200 feet in length and the south pier 2,500; the whole comprised of cribwork substructure with concrete superstructure. The channel between the piers will have a clear depth of 18 feet.

The citizens of Toronto are, of late years, beginning to take an active interest in the development of their harbour and particularly its industrial possibilities. The present harbour front is certainly not inviting or creditable. The majority of the wharfs are privately owned and many have been allowed to fall into a more or less dilapidated condition. The city now has under consideration a scheme for the improvement of the eastern portion of the harbour to provide sites for industrial purposes and already, on one of these locations, the National Iron Works have been established and are in operation. In all probability legislation will shortly be sought to reconstitute the Harbour Commission as at present existing, extending its scope and powers with the special object of prosecuting an effective scheme of harbour improvement.

OTTAWA RIVER STORAGE.

Reference was made in last year's report to this project, which was briefly outlined. A comprehensive report has now been received from the Engineer in charge, Mr. C. R. Coutlee, which has been carefully reviewed by the Assistant Deputy Minister, Mr. Arthur St. Laurent, who has had general direction of the work. It deals with the present water-power development on the Ottawa, the different lakes along its course, the characteristics of its watershed, its flow, together with an estimate of the extent of storage which can be obtained in those bodies of water which it has been

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possible to examine in a reasonably thorough manner. Two of the proposed reservoir dams, one at the foot of Lake Timiskaming and the other on Lake Kipawa, are now under contract. The slow rate of progress on the former work has been a matter of much disappointment to the department. The Kipawa dam has, however, progressed satisfactorily. Contract plans are now ready for a third dam of the system at Gordon Creek, another outlet of Kipawa lake, and plans are in course of preparation for the Quinze dam.

The relatively small expenditure for which the Ottawa River storage system, with its far-reaching benefits, can be secured, is strikingly illustrated by a comparison with a project adopted in 1880 for the Mississippi river by the United States government. Five reserve dams were built creating reservoirs having an estimated storage capacity of from 70 billion to 90 billion cubic feet at a total cost of some \$1,200,000. It is estimated that by the construction of the four dams above referred to, two of which are already under construction, it will be possible to secure a minimum storage capacity of 168 billion cubic feet of water at a cost of some \$600,000, or about twice the capacity of the Mississippi river reservoirs for one-half the cost. These dams will all be permanent concrete structures with stop-log sluiceways. It is confidently expected that the benefits accruing from this conservation of surplus water in the way of mitigating floods, regulation of flow for power purposes, and the raising of the low level plane in the navigable stretches of the river will open a new era of industrial and commercial activity throughout the Ottawa Valley.

TELEGRAPHS.

During the fiscal year under review, thirty-one miles of new line were constructed in Cape Breton, from Enon to Gabarus, and 63½ miles from Strathlorne to Whyccomagh. In Quebec, two short lines were built aggregating twenty-seven miles. In the Northwest, seventy miles were constructed from Athabaska Landing towards Peace River Landing a distance of 290 miles. The route of this line skirts the western shore of Lesser Slave lake for a distance of eighty miles, thence to the northwest for a further distance of ninety miles. The line traverses a good farming and grazing country which is being rapidly taken up by settlers.

The department now has a total mileage of pole line of 7,748½ miles.

SURVEYS.

The department has recently been turning its attention to the possibilities of the development of water transportation in the three prairie provinces. The construction of railways has kept pace with the settlement and most gratifying growth of this portion of Canada, and on the completion of the Grand Trunk Pacific railway, and its branch lines, that section of the Dominion will be well served.

In the early pioneer days, prior to the advent of the railways, a number of vessels of the Mississippi type, flat-bottom, stern-wheelers, were built and operated on the Saskatchewan river with considerable success. Among these were the *Northwest*, 200 feet long, 30 feet beam; *Northcote*, 175 feet long, 30 feet beam; *Manitoba*, 175 feet long, 30 feet beam; *Marquis*, 175 feet long, 30 feet beam, and the *Lily*, 100 feet long, 24 feet beam. Their operation covered a period from 1875 to 1886, when vessel car-

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riage was gradually abandoned, it having been found cheaper to ship by rail. Very little consideration had since been given to the opening up of commercial waterways in the Northwest until instructions were issued by you last fall that a careful study of conditions should be begun, and provision was made to carry out the necessary surveys and investigations to enable a definite conclusion to be reached as to what was possible in that direction, and to form a fairly approximate estimate of the cost.

It needs only a glance at the map of Western Canada to realize what inestimable advantages may be anticipated from the improvement of the natural water route to the foothills of the Rocky Mountains. It may be said to parallel the routes of the Grand Trunk Pacific, Canadian Pacific and Canadian Northern railways thus affording a competitive water route, which is the only real regulator of freight rates. The natural advantages of waterways in the transportation of heavy raw materials have been recognized to such an extent in the United States that there has lately been established a National Waterways Commission which is carrying on an investigation of considerable magnitude, with the object of improving inland navigation. Shallow draught navigation on the Saskatchewan would provide another national highway for commerce of much more importance to Canada than the Mississippi is to the United States, for that waterway runs at right angles to the American transcontinental railways and cannot therefore, in the strict sense, be a competitive route.

In the fall of 1909, a preliminary investigation was made of the Saskatchewan river between Lake Winnipeg and The Pas, a stretch of 146 miles, the most difficult portion to be improved. In the last twenty-three miles, the fall is 101 feet, to improve which will necessitate the construction of two dams and five locks, giving a 9-foot draught at low water as far as the end of Cedar lake which would be the head of deep-water navigation and the point of transfer. An approximate estimate of the cost of these improvements has been placed at about \$3,000,000. An important feature in connection with the scheme outlined is that at one of the proposed dams a water power of some 80,000 horse-power will be created which would be of immense importance in the establishment of local industries or the possible milling of wheat and grinding of pulp on the line of the projected Hudson's Bay railway.

Early this summer, the investigation of the Saskatchewan river above The Pas was continued and seven parties were placed in the field under the direction of Mr. L. R. Voligny. A reconnaissance survey is being made of the river between The Pas and Edmonton, a distance of 752 miles. Four level parties, two transit parties and a contour party are engaged on the work. Each level party will cover about 188 miles of the river and continuous levelling, over the whole distance from The Pas to Edmonton, will give the accurate river slope. The transit parties will do the necessary topographical and hydrographic work in portions of the river requiring special consideration. The greater part of the work of improvement will be required at La Colle falls some twenty-three miles below Prince Albert; the work extending twelve miles below to The Forks, where the north and south branches of the Saskatchewan meet. This stretch of the river is very crooked and narrow and contains no less than fifteen rapids; it is the most difficult and dangerous part of the North Saskatchewan to navigate.

A detailed survey was necessary to secure the data required in connection with the improvements to be made in that part of the river, and for the project of power

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development for industrial purposes. Other portions of the river requiring improvement will be Cadotte rapids, Nipawin rapids and Tobin rapids. The season's work will consist of the completion of the levels of 530 miles of the river and the making of special local surveys to ascertain what wing dams or other structures will be necessary to procure a navigable channel.

The Saskatchewan river is an alluvial stream of rapid flow and is obstructed by shifting sand bars; the latter presenting the greatest impediment to navigation. Above Cedar lake, the river seems to be adapted for only shallow draught navigation of from 4 to 5 feet. This, however, would be sufficient for vessels of the stern-wheel type and it is thought that the cost of securing navigation for such craft will not be very great.

An important link in this chain of water communication has already been secured by the construction of the St. Andrews lock and dam, situated on the Red river, twenty miles below the City of Winnipeg, and 28 miles above Lake Winnipeg. The formal opening by the Right Honourable the Prime Minister took place on July 14 last. This lock and dam afford, at periods of lowest water observed, uninterrupted navigation for vessels with a maximum draught of 9 feet between Winnipeg and points on Lake Winnipeg. The successful completion of this work has resulted in a revival of interest in the development of the resources of Lake Winnipeg which, it may be observed in passing, has an area of some 9,500 square miles, which is considerably larger than Lake Ontario. The lock has an effective length of 200 feet and a width of 45 feet and will dock a vessel of approximately 1,600 tons capacity. The maximum lift will be 21 feet and will occur only at periods of lowest water. Both the lock and dam are constructed after the most approved modern methods and the structure is said by competent judges to be one of the finest specimens of engineering work. The lock possesses all the latest features, including automatic self-balanced opening and filling valves which are being used for the first time in Canada. The lift of 21 feet is obtained by the construction of a movable dam of the Caméré type, consisting of a fixed substructure or dam of concrete and a series of steel truss bridges resting on piers from which are operated a number of frames, on which roll curtains of wooden lathes. This movable dam is the first of its kind to be built on the American continent.

With the development of navigation on the Saskatchewan, Canada would stand unique among the countries of the world in the matter of water transportation; 30 foot navigation (soon to be 35) from the sea to Montreal, a distance of nearly 1,000 miles; 14-foot from Montreal to Fort William, somewhat over 1,200 miles; 9-foot navigation from Winnipeg to the head of Cedar lake, and from there to the Rocky Mountains, from 4 to 5-foot navigation, over a distance of 1,100 miles, a total of approximately 3,300 miles of actual inland waterway, traversing the greater part of the northern half of this continent, the only break in the chain being the 400 mile stretch from Fort William to Winnipeg.

NELSON RIVER NAVIGATION.

An investigation was also made to determine the possibility of establishing navigation on the Nelson river between Lake Winnipeg and Hudson Bay. The report shows that although perfectly feasible, it would be an undertaking of considerable magnitude;

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in fact, another Georgian Bay canal project, for, whereas the Georgian Bay canal is 440 miles long, with a fall of 758 feet, the Nelson river channel would be 430 miles long with a fall of 700 feet.

ART GALLERY.

Now that the new Victoria Memorial Museum building is almost completed, it is timely that some reference should be made to the splendid work of the Advisory Art Council in connection with the National Art Gallery which is to find quarters therein.

On April 3, 1907, authority was granted by the Governor-in-Council for the appointment of an advisory board or council of three, to advise and assist the Honourable the Minister of Public Works in the selection and purchase of paintings, water colours and objects of art for the national gallery. Sir George A. Drummond, Sir Edmund Walker and Honourable Arthur Boyer were chosen to constitute the board and on the death of the first-named, early in the present year, Dr. Francis E. A. Shepperd was appointed in his stead. With these gentlemen, it is entirely a labour of love and the unselfish devotion of a portion of their valuable time has already borne splendid fruit in the striking betterment of Canada's National Gallery and the stimulus and encouragement given to art and sculpture in this country.

The painting and works already purchased on the advice of the council, comprise the following:—

| PAINTINGS. | ARTIST. |
|--|------------------------------|
| "WILLOWS, EVENING" | W. E. Atkinson, A. R. C. A. |
| "EVENING" | James M. Barnsley. |
| "A DUTCH PEASANT" | J. W. Beatty. |
| "THE CHESS PROBLEM" | Muriel C. W. Bolton. |
| "A MIDSUMMER NIGHT" | Archibald Brown. |
| "A MUSKOKA HIGHWAY" | F. H. Brigden. |
| "DEPARTURE OF DAY" | Harry Britton. |
| "MARGUERITE" | do |
| "A LITTLE PURITAN" | Franklin Brownell, R. C. A. |
| "CALVES" | do |
| "THE SMITHY" | Blair Bruce. |
| "EARLY MOONRISE IN SEPTEMBER" | William Brymner, P. R. C. A. |
| "EVENING" | do |
| "A MAY MORNING" | Elizabeth Stanhope Forbes. |
| "GRAY AND GOLD" | Miss Florence Carlyle. |
| "MORNING IN SPAIN" | W. H. Clapp. |
| "WINTER SCENE" | A. Suzor Côté. |
| "RT. HON. SIR WILFRID LAURIER" | A. Suzor Côté. |
| "THE FIRST SNOW" | Maurice Cullen, R. C. A. |
| "GENERAL BOOTH" | J. W. L. Forster, R. C. A. |
| "CANAL STREET, MORT-SUR-LOING" | Clarence Gagnon. |
| "IGNATIUS SANCHO" | Thos. Gainsborough, R. A. |
| "PORT OF AUDIERNE, BRETAGNE" | Fernand Le Gout-Gerard. |

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- "LANDSCAPE" J. L. Graham, A. R. C. A.
 "A CORNER OF THE PASTURE" do
 "OLD MILL" J. S. Gordon.
 "LANDING OF HIS ROYAL HIGH-
 NESS THE DUKE OF CORNWALL
 AND YORK AT QUEBEC" John Hammond, R. C. A.
 "MAN IN ARMOUR" Robert Harris, C. M. G., R. C. A.
 "NOCTURNE" Elizabeth McGillivray Knowles.
 "THE WAYSIDE CROSS" F. McGillivray Knowles.
 "MARY IN GREEN" John Lavery, R. S. A.
 "IN THE MOOSE COUNTRY" T. M. Martin, R. C. A.
 "EVENING ON THE CONESTOGA" C. M. Manly.
 "LE QUAI DES GRANDS AUGUS-
 TINS" J. W. Morrice.
 "CAP TOURMENTE" Edmund Morris, A. R. C. A.
 "PORTRAIT" A. Dickson Patterson, R. C. A.
 "ARRIVAL OF CHAMPLAIN AT
 QUEBEC" George Agnew Reid, R. C. A.
 "AFTERGLOW" do
 "LOOKING EAST" Mrs. Mary Hester Reid, A. R. C. A.
 "COL. CHARLES CHURCHILL" Sir Joshua Reynolds.
 "OMBRE ET LUMIERE" Charles Dagnac-Rivière.
 "MOTHER AND SON" John Wentworth Russell.
 "HUNDUS RETURNING WITH
 THEIR SPOIL" Henry Sandham.
 "FISHERMAN'S HOUSE AT
 TREPOT" Eugene L. Sidaner.
 "OCTOBER ON THE FRASER
 RIVER" F. M. Bell Smith, P. O. S. A., R. C. A.
 "KAULKAVEN, DORDRECHT" S. Stickland Tully.
 "RT. HON. SIR JOHN MACDO-
 NALD" F. A. Verner, A. R. C. A.
 "NUT GATHERERS IN THE
 FOREST" Homer Warson, R. C. A.
 "LLASSJE" A. Curtis Williamson, R. C. A.
 "THE MILL RACE" Mary E. Wrinch.

WATER COLOURS.

- "THE PROSPECTOR" Charles W. Jeffreys.

SCULPTURE.

- "YOUNG INDIANS RUNNING" Alfred Laliberté.
 "BRONZE BUST OF Mr. DEMON-
 TIGNY" Alfred Laliberté.
 "BUST OF DEMONTS" Hamilton McCarthy, R. C. A.
 "INDIAN WARRIOR" A. Phimister Proctor.
 "PROWLING PANTHER" do
 "STANDING PUMA" do

BLACK AND WHITE, AND ARTISTS' DRAWINGS.

Designs in mural decorations, &c., Walter Crane.
 Etchings, Clarence Gagnon.

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The gallery has for many years past suffered a serious handicap through lack of sufficient accommodation for the proper display of its treasures. It has quite outgrown the upper floor of the building on the corner of Queen and O'Connor streets, and its decided lack of attractiveness probably accounts for the marked decrease in the number of visitors during the last few years. There has been a falling off from 14,368 in the year 1905, to only 11,939, in 1910. This, however, will be a thing of the past upon the completion of the Victoria Memorial Museum where the gallery will probably occupy three floors of the east wing. The upper floor has been specially prepared for the display of paintings and, in addition to the gallery proper, there has been constructed, on the east side, a series of arches leading into alcoves where it is the intention to assemble examples of the different schools of art for the study of connoisseurs.

On the recommendation of the council, a curator has recently been appointed, in the person of Mr. Eric Brown, who comes well recommended as an authority on paintings and statuary. In its new quarters, which will afford proper scope for the work of the Art Council, the gallery should shortly become a Mecca for Canadian lovers of art and a delightful place of recreation for the general public.

It is with the keenest sorrow, which is shared by every member of the department, that I have to chronicle the death, on June 2 last, of the Secretary of the department, the late Mr. Napoléon Tessier. During the short time that he filled this responsible position, he proved himself a most faithful, willing and conscientious worker, having always the interest and welfare of the department at heart. His unexpected taking off, in the prime of his manhood, was a sad shock to all and his associates in the department deeply mourn the loss of a respected and esteemed colleague.

In conclusion, I desire to tender my sincere thanks to the staff of the department, and to express my deep appreciation of their efficient work during the past year.

I have the honour to be, Sir,

Your obedient servant,

J. B. HUNTER,

Deputy Minister.

PART II

REPORT OF THE CHIEF ACCOUNTANT

FOR THE

FISCAL YEAR ENDED MARCH 31

1910

DEPARTMENT OF PUBLIC WORKS, CANADA,
ACCOUNTANT'S OFFICE,
OTTAWA, October 19, 1910.

R. C. DESROCHERS, Esq.,
Secretary,
Department of Public Works,
Ottawa.

SIR,—I beg to submit the report upon the expenditures made by this Department during the fiscal year ended, March 31, 1910.

As in previous years, the report takes the form of three tabular statements, as follows:—

Statement A, showing the expenditures upon each work under the several heads of (1) construction and improvements, (2) repairs, (3) staff and maintenance. In treating of public buildings, as it would be cumbersome to give the cost of maintenance in detail in this statement, that expenditure is condensed into one item for each province, the fuller detail being reserved for *Statement B*.

Statement B, showing separately for each building, the cost of rent, salaries, heating, lighting and water.

Statement C, showing amounts advanced by Government for the construction of certain works of a semi-public character, under statutory authority and after inspection by officers of this Department.

The total expenditure during the fiscal year was \$11,342,365.29, a decrease of \$3,442,374.10 from the expenditure in 1908-9.

The volume of work passed through the Accountant's Branch during 1909-10 may be briefly indicated as follows:—

| | Number of cheques issued. | Amount. |
|--|---------------------------------|---------------|
| | | \$ cts. |
| Direct payment by Departmental cheque— | | |
| Issued by head office, Ottawa..... | 52,886 | 4,212,969 46 |
| " agencies..... | 10,155 | 733,003 95 |
| Total Departmental cheques..... | 63,041 | 4,945,913 41 |
| Payment by Receiver General's cheque, after applications issued by this office, upon the Auditor General (contract work, &c)..... | 1,120 | 6,396,451 88 |
| Total expenditure | ... | 11,342,365 29 |

I have the honour to be, sir,

Your obedient servant,

A. G. KINGSTON,
Chief Accountant and Controller.

STATEMENT OF EXPENDITURE

DURING

FISCAL YEAR ENDED MARCH 31, 1910

STATEMENT A.—Showing the Amounts Expended by the Department of Public Works of Canada during the Fiscal Year ending March 31, 1910.

| Name of Work. | Construction and Improvements. | Repairs and Furniture. | Staff and Maintenance. | Total. |
|---|--------------------------------|------------------------|------------------------|------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| PUBLIC BUILDINGS. | | | | |
| <i>Nova Scotia.</i> | | | | |
| Amherst post office &c. | 1,997 63 | 152 70 | ..... | 2,150 33 |
| Annapolis " ..... | ..... | 1 60 | ..... | 1 60 |
| Antigonish " ..... | ..... | 612 89 | ..... | 612 89 |
| Arichat " ..... | ..... | 411 19 | ..... | 411 19 |
| Baddeck " ..... | ..... | 13 76 | ..... | 13 76 |
| Bridgewater " | 3,552 60 | ..... | ..... | 3,552 60 |
| Canning armoury..... | 29 38 | ..... | ..... | 29 38 |
| Canso post office, &c..... | ..... | 1,205 44 | ..... | 1,205 44 |
| Dartmouth " ..... | ..... | 935 95 | ..... | 935 95 |
| Digby " ..... | ..... | 29 70 | ..... | 29 70 |
| Glace Bay " | 7,136 93 | 8 00 | ..... | 7,144 93 |
| Guysboro " | 1,673 96 | 45 33 | ..... | 1,719 29 |
| Halifax appraisers office..... | ..... | 169 42 | ..... | 169 42 |
| " Asst. Receiver General's office ..... | ..... | 4 00 | ..... | 4 00 |
| " custom house (new)..... | 3,001 95 | 1,342 25 | ..... | 4,344 20 |
| " power for machinery..... | ..... | ..... | 319 70 | 319 70 |
| " detention building..... | 2,499 53 | 769 74 | ..... | 3,269 27 |
| " Lawlor's Island quarantine station..... | ..... | 1,023 86 | ..... | 1,023 86 |
| " post office (former D.B.)..... | 38,993 69 | 545 23 | ..... | 39,538 92 |
| Inverness post office, &c..... | ..... | 353 25 | ..... | 353 25 |
| Kentville " ..... | ..... | 81 16 | ..... | 81 16 |
| Liverpool " ..... | ..... | 160 80 | ..... | 160 80 |
| Lunenburg " | 1,913 25 | 71 00 | ..... | 1,984 25 |
| Nappan experimental farm..... | 21 57 | 51 65 | ..... | 73 22 |
| New Glasgow post office, &c..... | 1,457 88 | 15 61 | ..... | 1,473 49 |
| North Sydney " ..... | ..... | 503 47 | ..... | 503 47 |
| Parrsboro " ..... | ..... | 125 40 | ..... | 125 40 |
| Pictou custom house..... | ..... | 332 02 | ..... | 332 02 |
| " post office, &c..... | ..... | 2,012 39 | ..... | 2,012 39 |
| Shelburne " | 11,915 02 | ..... | ..... | 11,915 02 |
| Springhill " ..... | ..... | 835 79 | ..... | 835 79 |
| Sydney " ..... | ..... | 287 18 | ..... | 287 18 |
| Sydney Mines post office, &c..... | ..... | 203 47 | ..... | 203 47 |
| Truro armoury..... | 1,335 83 | ..... | ..... | 1,335 83 |
| " post office, &c..... | ..... | 114 50 | ..... | 114 50 |
| Westville post office, &c..... | 4,215 00 | 4 80 | ..... | 4,219 80 |
| Windsor " ..... | ..... | 25 18 | ..... | 25 18 |
| Wolfville " ..... | ..... | 138 10 | ..... | 138 10 |
| Yarmouth " | 125 00 | 1,053 57 | ..... | 1,178 57 |
| Heating, lighting, water, &c., for all buildings in Nova Scotia (for details, see 32). | ..... | ..... | 50,425 30 | 50,425 30 |
| Totals, Nova Scotia..... | 79,869 22 | 13,640 40 | 50,745 00 | 144,254 62 |
| <i>Prince Edward Island.</i> | | | | |
| Charlottetown Dominion buildings..... | 1,280 54 | 1,046 78 | ..... | 2,327 32 |
| Georgetown post office, etc..... | 5,043 01 | 12 90 | ..... | 5,055 91 |
| Montague " ..... | ..... | 63 46 | ..... | 63 46 |
| Souris " ..... | ..... | 127 89 | ..... | 127 89 |
| Summerside " ..... | ..... | 200 56 | ..... | 200 56 |
| Heating, lighting, water, etc., for all buildings in Prince Edward Island (for details see 32). | | | 9,194 51 | 9,194 51 |
| Totals, Prince Edward Island..... | 6,323 55 | 1,451 59 | 9,194 51 | 16,969 65 |

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PART II.—STATEMENT A.—EXPENDITURE—Continued.

| Name of Work. | Construction and Im- provements. | Repairs and Furniture. | Staff and Main- tenance. | Total. |
|---|--|------------------------------|--------------------------------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| PUBLIC BUILDINGS. | | | | |
| <i>New Brunswick.</i> | | | | |
| Bathurst post office, etc. | | 177 88 | | 177 88 |
| Buctouche " " | | 80 00 | | 80 00 |
| Campbellton " " | | 270 51 | | 270 51 |
| Chatham armoury. | 6,668 32 | | | 6,668 32 |
| " post office, etc. | | 240 72 | | 240 72 |
| " quarantine station. | | 105 90 | | 105 90 |
| Dalhousie post office, etc. | | 39 56 | | 39 56 |
| Fairville " " | | 84 70 | | 84 70 |
| Fredericton armoury. | | 1 80 | | 1 80 |
| " post office, etc. | | 1,556 04 | | 1,556 04 |
| Grand Falls " " | | 67 66 | | 67 66 |
| Marysville " " | | 2 50 | | 2 50 |
| Moncton " " | | 419 24 | | 419 24 |
| Newcastle " " | | 278 80 | | 278 80 |
| Richibucto " " | 200 00 | 102 00 | | 302 00 |
| St. John custom house. | 1,453 95 | 53 35 | | 1,507 30 |
| " cattle quarantine station. | | 32 06 | | 32 06 |
| " drill hall. | 596 50 | | | 596 50 |
| " immigrant building. | | 728 98 | | 728 98 |
| " engineer's office. | | 215 95 | | 215 95 |
| " militia stores building. | | 522 62 | | 522 62 |
| " Partridge Island quarantine station. | 6,168 72 | | | 6,168 72 |
| " post office. | 1,873 31 | 361 19 | | 2,234 50 |
| " savings bank. | | 274 20 | | 274 20 |
| " West post office. | | 1,948 76 | | 1,948 76 |
| St. Leonard immigrant building (Victoria Co.). | | 51 53 | | 51 53 |
| St. Stephens post office, etc. | | 55 38 | | 55 38 |
| Sussex " " | | 242 32 | | 242 32 |
| Tracadie Lazaretto | 1,346 44 | 127 36 | | 1,473 80 |
| Woodstock post office, etc. | | 225 82 | | 225 82 |
| Heating, lighting, water, etc., for all buildings in New Brunswick (for details see 33). | | | 45,829 45 | 45,829 45 |
| Totals, New Brunswick. | 18,307 24 | 8,266 83 | 45,829 45 | 72,403 52 |
| <i>Quebec.</i> | | | | |
| Acton Vale post office. | | 15 53 | | 15 53 |
| Arthabaskville post office. | | 27 60 | | 27 60 |
| Aylmer " " | | 830 75 | | 830 75 |
| Beebe Junction custom house (Stanstead). | | 375 22 | | 375 22 |
| Beebe Plain immigrant building (Stanstead). | | 34 00 | | 34 00 |
| Berthierville, post office. | | 17 31 | | 17 31 |
| Buckingham " " | | 81 62 | | 81 62 |
| Chicoutimi " " | | 661 02 | | 661 02 |
| Cookshire " " | 9,118 12 | | | 9,118 12 |
| Coaticook " " | | 47 91 | | 47 91 |
| Drummondville " " | | 192 75 | | 192 75 |
| Dundee custom house. | | 94 40 | | 94 40 |
| Grosse Isle quarantine station, improvements. | 5,690 35 | | | 5,690 35 |
| Farnham post office, &c. | | 614 99 | | 614 99 |
| Father Point engineer's office. | | 29 20 | | 29 20 |
| Fraserville post office, &c. | | 1,438 50 | | 1,438 50 |
| Granby " " | | 73 02 | | 73 02 |
| Hochelaga " " | | 50 44 | | 50 44 |
| Hull " " | | 62 95 | | 62 95 |
| Joliette armoury. | 14,868 33 | | | 14,868 33 |
| " post office, &c. | | 517 25 | | 517 25 |
| Knowlton armoury. | 397 00 | | | 397 00 |
| " post office, &c. | 5,239 21 | 1 20 | | 5,240 41 |
| Lachine " " | | 45 04 | | 45 04 |
| Lachute " " | 3,640 83 | 4 28 | | 3,645 11 |
| Lake Megantic post office. | | 98 60 | | 98 60 |

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PART II.—STATEMENT A.—EXPENDITURE—Continued.

| Name of Work. | Construction and Im- provements. | Repairs and Furniture. | Staff and Main- tenance. | Total. |
|--|--|------------------------------|--------------------------------|------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| PUBLIC BUILDINGS. | | | | |
| Quebec—Continued. | | | | |
| Laprairie post office | | 65 02 | | 65 02 |
| L'Assomption " | | 84 78 | | 84 78 |
| Lévis armory | 133 93 | | | 133 93 |
| " post office, &c. | | 1,933 59 | | 1,933 59 |
| Longueuil post office, &c. | 195 00 | 404 12 | | 599 12 |
| Magog " | 11,475 07 | | | 11,475 07 |
| Marieville " | | 6 00 | | 6 00 |
| Metapedia " | | 125 91 | | 125 91 |
| Montmagny " | | 417 51 | | 417 51 |
| Montreal custom house | | 3,159 78 | | 3,159 78 |
| " eastern postal station | 9,409 35 | 3,017 97 | | 12,427 32 |
| " engineer's office | | 126 32 | | 126 32 |
| " examining warehouse (old) | 6,600 11 | 1,524 41 | | 8,124 52 |
| " power for elevator | | | 2,565 63 | 2,565 63 |
| " immigration office | | 843 36 | | 843 36 |
| " inland revenue office | | 1,304 91 | | 1,304 91 |
| " new examining warehouse | | 19 00 | | 19 00 |
| " new militia stores | 3,012 80 | | | 3,012 80 |
| " pneumatic tube system | | 541 40 | | 541 40 |
| " post office (main) | 111,668 42 | 4,631 37 | | 116,299 79 |
| " power for elevator | | | 2,921 19 | 2,921 19 |
| " postal station " B " | | 1,149 30 | | 1,149 30 |
| " " C " | | 80 03 | | 80 03 |
| Railway commission office, Board of Trade Building | | 59 02 | | 59 02 |
| grain inspector's office, Board of Trade Bldg. | | 59 44 | | 59 44 |
| clerk of works office, Merchants' Bank Building | | 7 50 | | 7 50 |
| Windsor Station, sorting room | | 968 00 | | 968 00 |
| Nicolet post office | | 799 13 | | 799 13 |
| Nominique immigrant building | | 55 72 | | 55 72 |
| Peribonca " | | 304 71 | | 304 71 |
| Pierreville post office | 1,862 36 | 5 25 | | 1,867 61 |
| Plessisville " | 15,624 39 | | | 15,624 39 |
| Pointe St. Charles (new P. station) | 38,511 10 | | | 38,511 10 |
| Quebec Citadel, Governor General's quarters | | 821 41 | | 821 41 |
| Quebec custom house | | 630 00 | | 630 00 |
| " dominion arsenal | 3,617 92 | | | 3,617 92 |
| " drill shed (school of gunnery) | 36,936 58 | | | 36,936 58 |
| " examining warehouse | 2,383 04 | 238 48 | | 3,221 52 |
| " Inland Revenue | | 108 13 | | 108 13 |
| " Marine and Fisheries building | | 21 25 | | 21 25 |
| " immigration buildings | 6,497 06 | 1,325 00 | | 7,822 06 |
| " hospital for trachoma | 1,004 11 | 4 70 | | 1,008 81 |
| " observatory | | 111 35 | | 111 35 |
| " post office | 8,956 67 | 1,524 06 | | 10,480 73 |
| " power for machinery | | | 913 00 | 913 00 |
| " East, St. Roch's P.O. | 37,660 23 | | 48 78 | 37,709 01 |
| Richmond post office, &c | | 602 16 | | 602 16 |
| Rigaud armory | 631 32 | | | 631 32 |
| Rimouski armory | 327 44 | | | 327 44 |
| " post office | | 590 90 | | 590 90 |
| Roberval immigration shed | | 39 20 | | 39 20 |
| " post office | | 24 30 | | 24 30 |
| Sherbrooke drill hall | 40,831 49 | | | 40,831 49 |
| " post office | | 1,691 02 | | 1,691 02 |
| Sorel " | | 734 50 | | 734 50 |
| St. Césaire, tobacco curing station | 610 00 | | | 610 00 |
| St. Gabriel de Brandon post office, &c. | | 130 00 | | 130 00 |
| St. Henri post office | | 457 76 | | 457 76 |
| St. Hyacinthe Inland Revenue office | | 20 35 | | 20 35 |
| " post office | | 587 78 | | 587 78 |
| St. Jacques de l'Achigan post office | | 50 00 | | 50 00 |

1 GEORGE V., A. 1911

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

| Name of Work. | Construction and Im- provements. | Repairs and Furniture. | Staff and Main- tenance. | Total. |
|---|--|------------------------------|--------------------------------|------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| PUBLIC BUILDINGS. | | | | |
| <i>Quebec—Concluded.</i> | | | | |
| St. Jacques de l'Achigan tobacco curing station..... | 586 50 | | | 586 50 |
| St. Jérôme post office..... | | 79 95 | | 79 95 |
| St. John's "..... | 2,591 47 | 363 80 | | 2,955 27 |
| St. John's military buildings, cavalry stables..... | 55 44 | | | 55 44 |
| St. Louis du Mile End post office..... | | 546 44 | | 546 44 |
| St. Thérèse post office..... | | 71 35 | | 71 35 |
| Terrebonne "..... | | 43 49 | | 43 49 |
| Thetford Mines "..... | | 52 16 | | 52 16 |
| Three Rivers custom house..... | | 778 37 | | 778 37 |
| " drill hall and armoury..... | 55 55 | 134 40 | | 189 95 |
| " post office..... | 10,563 83 | 1,053 06 | | 11,616 89 |
| Valleyfield post office..... | 1,615 00 | 189 51 | | 1,804 51 |
| Ville Marie Inland Revenue office..... | | 25 00 | | 25 00 |
| Victoriaville post office, &c..... | | 993 63 | | 993 63 |
| Westmount post office..... | 14 00 | | | 14 00 |
| Heating, lighting, water, &c., for all buildings in Quebec (for details see 34)..... | | | 158,061 00 | 158,061 00 |
| Totals, Quebec..... | 392,981 02 | 41,050 64 | 164,509 60 | 598,544 26 |
| <i>Ontario.</i> | | | | |
| Alexandria armoury..... | 90 00 | | | 90 00 |
| " post office, &c..... | | 35 85 | | 35 85 |
| Almonte "..... | | 1,100 97 | | 1,100 97 |
| Amherstburg "..... | | 27 71 | | 27 71 |
| Arnprior "..... | | 666 19 | | 666 19 |
| Barrie "..... | | 577 90 | | 577 90 |
| Belleville armoury..... | 8,572 63 | | | 8,572 63 |
| " post office, &c..... | | 724 87 | | 724 87 |
| Berlin "..... | | 700 64 | | 700 64 |
| Bowmanville "..... | | 35 24 | | 35 24 |
| Braunton "..... | | 214 52 | | 214 52 |
| Brantford drill hall and armoury..... | 2,117 40 | 250 00 | | 2,367 40 |
| " post office, &c..... | | 290 97 | | 290 97 |
| Bridgeburg "..... | | 531 60 | | 531 60 |
| Brockville "..... | | 928 60 | | 928 60 |
| Carleton Place "..... | | 22 25 | | 22 25 |
| Cayuga "..... | | 34 17 | | 34 17 |
| Chatham, armoury..... | 30 00 | | | 30 00 |
| " post office, &c..... | | 714 10 | | 714 10 |
| Chesley "..... | | 35 57 | | 35 57 |
| Clinton "..... | 107 00 | 113 64 | | 220 64 |
| Cobalt custom house..... | | 332 35 | | 332 35 |
| Cobourg post office, &c..... | | 617 92 | | 617 92 |
| Cornwall "..... | 2,772 63 | 99 93 | | 2,872 56 |
| Deseronto "..... | | 197 60 | | 197 60 |
| Dundas "..... | | 28 00 | | 28 00 |
| Durham armoury..... | 5,803 35 | | | 5,803 35 |
| Essex post office, &c..... | | 27 92 | | 27 92 |
| Fergus "..... | | 45 64 | | 45 64 |
| Fort William "..... | 10,568 88 | 100 65 | | 10,669 53 |
| Galt "..... | | 42 46 | | 42 46 |
| Gananoque, custom house..... | | 10 00 | | 10 00 |
| " post office, &c..... | | 12 25 | | 12 25 |
| Glencoe "..... | 22,826 84 | | | 22,826 84 |
| Goderich "..... | | 29 07 | | 29 07 |
| Guelph armoury..... | 9,932 91 | | | 9,932 91 |
| " post office, &c..... | | 109 24 | | 109 24 |
| Hamilton custom house..... | | 129 31 | | 129 31 |
| " drill hall..... | 18,894 91 | | | 18,894 91 |
| " post office, &c..... | | 2,383 52 | | 2,383 52 |

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

| Name of Work. | Construction and Im- provements. | Repairs and Furniture. | Staff and Main- tenance. | Total. |
|---|--|------------------------------|--------------------------------|------------|
| PUBLIC BUILDINGS. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| <i>Ontario—Continued.</i> | | | | |
| Hamilton power for machinery..... | | | 36 00 | 36 00 |
| " postal station 'B'..... | | 698 53 | | 698 53 |
| Harriston post office, &c..... | | 58 30 | | 58 30 |
| Harrow, tobacco curing station..... | 2,336 30 | | | 2,336 30 |
| Hawkesbury post office, &c..... | | 63 83 | | 63 83 |
| Ingersoll " "..... | | 40 33 | | 40 33 |
| Kemptville " "..... | | 44 53 | | 44 53 |
| Kenora " "..... | | 168 89 | | 168 89 |
| Kincardine " "..... | 10,718 07 | | | 10,718 07 |
| Kingston custom house..... | | 1,255 97 | | 1,255 97 |
| " inland revenue office..... | | 412 46 | | 412 46 |
| " post office, &c..... | | 2,310 29 | | 2,310 29 |
| Kingston Military District— | | | | |
| Kingston ordnance stores..... | 2,265 00 | 11 88 | | 2,276 88 |
| " R. M. College, additional accommodation | 31,653 96 | | | 31,653 96 |
| " R. M. C., stables..... | 9,568 81 | | | 9,568 81 |
| Leamington, post office, &c..... | 11,235 79 | | | 11,235 79 |
| Lindsay " "..... | | 71 79 | | 71 79 |
| Listowel " "..... | | 75 05 | | 75 05 |
| London, custom house..... | | 972 47 | | 972 47 |
| London drill hall and armoury..... | 1,414 58 | | | 1,414 58 |
| " military buildings..... | 150 00 | | | 150 00 |
| " post office, &c..... | | 1,404 05 | | 1,404 05 |
| Markham post office, &c..... | 2,949 39 | | | 2,949 39 |
| Mitchell " "..... | | 36 87 | | 36 87 |
| Mount Forest public building..... | | 46 22 | | 46 22 |
| Napanee post office, &c..... | | 246 85 | | 246 85 |
| Niagara Falls armoury..... | 54 80 | | | 54 80 |
| " post office, &c..... | | 349 03 | | 349 03 |
| North Bay " "..... | | 2,642 28 | | 2,642 28 |
| Orangeville " "..... | | 36 55 | | 36 55 |
| Orillia " "..... | | 88 55 | | 88 55 |
| Oshawa " "..... | | 37 99 | | 37 99 |
| Ottawa—astronomical observatory..... | 14,002 92 | 0 35 | | 14,003 27 |
| " " power for machinery..... | | | 215 40 | 215 40 |
| " bacteriological laboratory..... | | 145 89 | | 145 89 |
| Ottawa Departmental Buildings— | | | | |
| Equipment for elevator, western block..... | 3,696 68 | | | 3,696 68 |
| Improvement in lavatories..... | 9,878 49 | | | 9,878 49 |
| Ottawa, experimental farm..... | 13,974 07 | 4,520 87 | | 18,494 94 |
| " fuel testing building (Dept. Mines)..... | 15,001 39 | | | 15,001 39 |
| " Major's hill park..... | | | 7,927 62 | 7,927 62 |
| " military stores..... | 3,786 29 | | | 3,786 29 |
| " national art gallery..... | 9,413 20 | | 720 00 | 10,133 20 |
| " new departmental buildings Sussex st..... | 89,889 80 | | | 89,889 80 |
| " Parliament building, new wing, &c..... | 92,688 76 | | | 92,688 76 |
| " post office (fire escape)..... | 498 00 | | | 498 00 |
| " power for elevator..... | | | 839 08 | 839 08 |
| Rideau hall..... | | | 24,630 57 | 24,630 57 |
| " grounds.....\$ 9,440 94 | | | | |
| " snow.....1,040 21 | | | | |
| " fuel and light.....8,552 00 | | | 19,693 15 | 19,693 15 |
| " watchman.....660 00 | | | | |
| " Royal mint, refinery..... | 29,975 59 | | | 29,975 59 |
| " tobacco curing station..... | 310 00 | | | 310 00 |
| " Victoria museum..... | 215,032 30 | | | 215,032 30 |
| " generally, steel fittings..... | 49,999 07 | | | 49,999 07 |
| " Parliament grounds..... | 8,601 45 | | 11,999 26 | 20,600 71 |
| " power for elevators..... | | | 9,331 38 | 9,331 38 |
| " removal of snow..... | | | 3,042 57 | 3,042 57 |
| " repairs and furniture..... | | 242,898 37 | | 242,898 37 |
| " telephone service..... | | | 17,783 77 | 17,783 77 |
| Owen Sound post office, &c..... | 13,464 95 | | | 13,464 95 |

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PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

| Name of Work. | Construc- tion and Improvements. | Repairs and Furniture. | Staff and Main- tenance. | Total. |
|--|--|------------------------------|--------------------------------|---------------------|
| PUBLIC BUILDINGS—Continued. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| <i>Ontario—Concluded.</i> | | | | |
| Wingham post office, &c. | | 158 89 | ... | 158 89 |
| Woodstock " | | 1,171 15 | ... | 1,171 15 |
| Heating, lighting, water, &c., for all buildings in Ontario (for details see 37). | | | 487,608 89 | 487,608 89 |
| Totals, Ontario. | 894,791 71 | 290,365 41 | 584,608 85 | 1,769,765 97 |
| <i>Manitoba.</i> | | | | |
| Brandon drill hall | 2,859 05 | | | 2,859 05 |
| " experiment-l farm | 541 38 | 323 51 | | 864 89 |
| " immigration shed. | | 52 25 | | 52 25 |
| " post office, &c. | | 228 69 | | 228 69 |
| Dauphin post office, &c. | 12,089 45 | | | 12,089 45 |
| Elmwood post office. | | 200 00 | | 200 00 |
| Emerson cattle quarantine station. | 2,441 80 | | | 2,441 80 |
| " post office, &c. | 28,656 76 | | | 28,656 76 |
| Gretna cattle quarantine station | | 74 55 | | 74 55 |
| Neepawa post office, &c. | 17,319 20 | | | 17,319 20 |
| Portage La Prairie armoury. | 6,500 00 | | | 6,500 00 |
| " post office, &c. | | 342 06 | | 342 06 |
| St. Boniface post office, &c. | | 117 14 | | 117 14 |
| Selkirk post office, &c. | 1,915 32 | 1,348 16 | | 3,263 48 |
| Souris post office. | | 188 72 | | 188 72 |
| Winnipeg custom house | | 909 60 | | 909 60 |
| " examining warehouse. | | 317 14 | | 317 14 |
| " new examining warehouse. | 112,048 27 | | | 112,048 27 |
| " immigration building (new). | | 2,500 00 | | 2,500 00 |
| " power for machinery | | | 84 20 | 84 20 |
| " immigration building (old). | | 931 36 | | 931 36 |
| " lands office | | 316 95 | | 316 95 |
| " military buildings, quarters for N. Com. officers | 3,065 95 | | | 3,065 95 |
| " post office (old) | 4,850 98 | 1,789 00 | | 6,639 98 |
| " power for machinery | | | 435 60 | 435 60 |
| " post office (new). | | 3,807 83 | | 3,807 83 |
| " postal station 'B'. | | 831 81 | | 831 81 |
| " post office north of C.P. R. track | | 11 80 | | 11 80 |
| " power for machinery | | | 391 95 | 391 95 |
| " Inspector's office (grain exchange building). | | 207 40 | | 207 40 |
| Heating, lighting, water, &c., for all buildings in Manitoba (for details see 37). | | | 54,126 42 | 54,126 42 |
| Totals, Manitoba .. | 192,288 16 | 14,587 97 | 55,038 17 | 261,914 30 |
| <i>Saskatchewan and Alberta.</i> | | | | |
| Battleford immigrant building | 2,321 50 | | | 2,321 50 |
| " Dominion land office. | | 210 00 | | 210 00 |
| Biggar immigrant building | 2,654 00 | 76 40 | | 2,730 40 |
| Calgary Dominion lands office. | | 83 71 | | 83 71 |
| " post office, &c. | 6,196 99 | 1,549 35 | | 7,746 34 |
| " power for machinery. | | | 421 44 | 421 44 |
| Edmonton Dominion lands office, &c. | | 1,467 03 | | 1,467 03 |
| " immigrant building | 5,950 82 | 56 75 | | 6,007 57 |
| " post office. | 49,491 45 | 42 33 | | 49,533 78 |
| " power for machinery | | | 13 65 | 13 65 |
| Estevan post office, &c. | 21,001 96 | | | 21,001 96 |
| Grouard Dominion lands office. | | 372 05 | | 372 05 |
| Humbolt Dominion lands office. | | 1,225 00 | | 1,225 00 |
| Indian Head experimental farm | 555 99 | 167 65 | | 723 64 |
| " forestry station | | 343 35 | | 343 35 |

1 GEORGE V., A. 1911

PART II.—STATEMENT A.—EXPENDITURE—Continued.

| Name of Work. | Construction and Improvements. | Repairs and Furniture. | Staff and Maintenance. | Total. |
|---|--------------------------------|------------------------|------------------------|------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| PUBLIC BUILDINGS—Continued. | | | | |
| <i>Saskatchewan and Alberta—Concluded.</i> | | | | |
| Lesser Slave Lake lands office..... | | 50 00 | | 50 00 |
| Lethbridge armoury..... | 12 56 | | | 12 56 |
| " custom house & Dominion lands office..... | 644 02 | | | 644 02 |
| " experimental farm..... | 47 05 | | | 47 05 |
| " immigrant shed..... | | 119 75 | | 119 75 |
| " post office, &c..... | | 1,712 64 | | 1,712 64 |
| Lloydminster armoury..... | 23 38 | | | 23 38 |
| " lands office..... | | 27 00 | | 27 00 |
| Macleod custom house..... | | 15 00 | | 15 00 |
| Maple Creek post office, &c..... | 6,018 67 | | | 6,018 67 |
| Medicine Hat armoury..... | 1,501 48 | | | 1,501 48 |
| " post office..... | 8,001 09 | 80 85 | | 8,081 94 |
| Moosejaw court house and Dominion lands office..... | | 475 75 | | 475 75 |
| " post office, &c..... | | 772 45 | | 772 45 |
| " immigrant shed..... | 3,319 70 | 140 80 | | 3,460 50 |
| North Battleford, immigrant shed..... | | 478 55 | | 478 55 |
| North Portal cattle quarantine station..... | 13,000 00 | | | 13,000 00 |
| Phillips immigrant building..... | 2,733 00 | | | 2,733 00 |
| Prince Albert Dominion lands and registry office..... | | 102 05 | | 102 05 |
| " immigrant building..... | | 24 30 | | 24 30 |
| " penitentiary..... | 24,467 88 | | | 24,467 88 |
| " post office..... | | 1,308 61 | | 1,308 61 |
| Red Deer court house and Dominion lands office..... | | 451 30 | | 451 30 |
| Regina Dominion lands office..... | | 323 53 | | 323 53 |
| " immigrant building..... | 3,406 10 | 400 21 | | 3,806 31 |
| " post office and custom house..... | 9,654 57 | 1,083 41 | | 10,737 98 |
| Rosthern experimental farm..... | 39 10 | | | 39 10 |
| Saskatoon immigrant building..... | | 341 00 | | 341 00 |
| " post office, &c..... | 32,302 06 | 452 65 | | 32,754 71 |
| Strathcona armoury..... | 26 36 | | | 26 36 |
| " public building..... | | 655 45 | | 655 45 |
| " immigrant building..... | | 317 80 | | 317 80 |
| Swift Current immigrant building..... | | 94 00 | | 94 00 |
| Wainright immigrant shed..... | | 2,408 76 | | 2,408 76 |
| Wetaskiwin post office, &c..... | 4,069 63 | | | 4,069 63 |
| Willow Creek cattle quar. station..... | | 75 00 | | 75 00 |
| Yonker immigrant shed..... | | 2,654 20 | | 2,654 20 |
| Yorkton post office, &c..... | 20,625 04 | | | 20,625 04 |
| Heating, lighting, water, &c., for all buildings in Saskatchewan and Alberta (for details see 39) | | | 60,973 41 | 60,973 41 |
| Totals, Saskatchewan and Alberta..... | 218,064 40 | 20,158 68 | 61,408 50 | 299,631 58 |
| <i>British Columbia.</i> | | | | |
| Agassiz experimental farm..... | 628 85 | 151 25 | | 780 10 |
| Atlin post office, &c..... | | 48 00 | | 48 00 |
| Chilliwack post office, &c..... | | 23 20 | | 23 20 |
| Cumberland "..... | 2,097 13 | 1 75 | | 2,098 88 |
| Fernie "..... | 21,020 68 | | | 21,020 68 |
| Gateway cattle quarantine station..... | | 400 00 | | 400 00 |
| Grand Forks cattle quarantine station..... | | 45 00 | | 45 00 |
| " custom house..... | | 50 00 | | 50 00 |
| Huntingdon "..... | | 82 99 | | 82 99 |
| Kamloops, armoury..... | 84 90 | | | 84 90 |
| " post office, &c..... | | 44 60 | | 44 60 |
| " lands office..... | | 247 13 | | 247 13 |
| Ladysmith post office, &c..... | 8,499 18 | 13 40 | | 8,512 58 |
| Midway, cattle quarantine station..... | | 250 00 | | 250 00 |
| Nanaimo post office, &c..... | | 940 81 | | 940 81 |
| Nelson "..... | | 2,482 81 | | 2,482 81 |
| New Westminster fisheries and Indian office..... | | 91 30 | | 91 30 |
| " post office, &c..... | | 1,239 43 | | 1,239 43 |

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

| Name of Work. | Construction and Improvements. | Repairs and Furniture. | Staff and Maintenance. | Total. |
|--|--------------------------------|------------------------|------------------------|------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| PUBLIC BUILDINGS—<i>Concluded.</i> | | | | |
| <i>British Columbia—Concluded.</i> | | | | |
| Prince Rupert post office, &c..... | | 1,246 54 | | 1,246 54 |
| Rossland, cattle quarantine station..... | | 19 25 | | 19 25 |
| " post office, &c..... | | 250 05 | | 250 05 |
| Union Bay custom house..... | | 338 00 | | 338 00 |
| Vancouver, Chinese hospital..... | | 574 00 | | 574 00 |
| " ex. warehouse..... | | 179 21 | | 179 21 |
| " post office (old)..... | | 382 70 | | 382 70 |
| " power for machinery..... | | | 201 25 | 201 25 |
| " post office (new)..... | | 1,521 93 | | 1,521 93 |
| " public building..... | 59,999 08 | 424 00 | | 60,423 08 |
| Vernon post office, &c..... | | 446 21 | | 446 21 |
| Victoria, cattle quarantine station (outer wharf)..... | | 171 00 | | 171 00 |
| " immigration building..... | 37,435 08 | 50 00 | | 37,485 08 |
| " marine hospital..... | | 14 62 | | 14 62 |
| " post office (new)..... | | 2,179 45 | | 2,179 45 |
| " power for machinery..... | | | 508 94 | 508 94 |
| " post office (old)..... | 5,193 48 | 197 56 | | 5,391 04 |
| " old custom house..... | | 591 70 | | 591 70 |
| " power for machinery..... | | | 49 12 | 49 12 |
| Williams Head, quarantine station..... | 6,999 81 | 180 00 | | 7,179 81 |
| Heating, lighting, water, &c., for all buildings in British Columbia (for details see 39)..... | | | 44,588 94 | 44,588 94 |
| Totals, British Columbia..... | 141,938 19 | 14,877 89 | 45,348 25 | 202,184 33 |
| <i>Yukon Territory.</i> | | | | |
| Dawson, Commissioner's office..... | 10,580 13 | | | 10,580 13 |
| Heating, lighting, water, &c., for all buildings in Yukon Territory (for details see 39)..... | | | 79,974 76 | 79,974 76 |
| Totals, Yukon Territory..... | 10,580 13 | | 79,974 76 | 90,554 89 |
| <i>Public Buildings Generally.</i> | | | | |
| Advertising coal tenders—Dominion buildings..... | | | 3,464 85 | 3,464 85 |
| Printing, stationery, instruments, travelling, &c..... | | | 18,910 10 | 18,910 10 |
| Salaries of resident clerk of works..... | | | 19,989 53 | 19,989 53 |
| Totals, Public Buildings generally..... | | | 42,364 48 | 42,364 48 |

1 GEORGE V., A. 1911

PART II.—STATEMENT A.—EXPENDITURE—Continued.

| Name of Work. | Dredging. | Construction and Improvements. | Repairs. | Staff and Maintenance. | Total. |
|--|-----------|--------------------------------|----------|------------------------|-----------|
| HARBOURS AND RIVERS. | § cts. | § cts. | § cts. | § cts. | § cts. |
| <i>Nova Scotia.</i> | | | | | |
| Abercrombie Point wharf..... | | 5,731 08 | | | 5,731 08 |
| Amaguadees Pond..... | | | 165 10 | | 165 10 |
| Anuherst Point wharf..... | | | 313 30 | | 313 30 |
| Anderson's Cove breakwater..... | | 999 97 | | | 999 97 |
| Annapolis ice piers..... | | 25,919 86 | | | 25,919 86 |
| Argyle Head wharf..... | | | 99 90 | | 99 90 |
| Arisaig breakwater..... | | | 1,108 74 | | 1,108 74 |
| Avonport wharf..... | | 1,999 66 | | | 1,999 66 |
| Baddeck wharf..... | | 1,710 72 | | | 1,710 72 |
| Baileys Brook harbour..... | | | 100 00 | | 100 00 |
| Basswood Beach..... | | | 50 00 | | 50 00 |
| Bay St. Lawrence boat harbour..... | | 706 25 | | | 706 25 |
| Big Bras d'Or wharf..... | | | 1,918 36 | | 1,918 36 |
| Blue Rocks..... | | 4,112 95 | | | 4,112 95 |
| Bluff Head breakwater..... | | 81 21 | | | 81 21 |
| Boularderie Centre..... | | | 25 02 | | 25 02 |
| Bretton Cove protection works..... | | 599 98 | | | 599 98 |
| Canada Creek breakwater..... | | 3,372 92 | | | 3,372 92 |
| Canning (See Habitant River). | | | | | |
| Cape Negro (The Haulover, Shelburne Co.)..... | | | 590 21 | | 590 21 |
| Cape North (wharf at Sugar Loaf, Aspy Bay North)..... | | 243 82 | | | 243 82 |
| Cape St. Mary breakwater..... | | 615 00 | | | 615 00 |
| Caribou Island causeway..... | | 1,215 36 | | | 1,215 36 |
| Castle Bay, wharf extension..... | | 2,041 61 | | | 2,041 61 |
| Chebougue harbour..... | | | 47 75 | | 47 75 |
| Cheticamp harbour..... | 39,043 10 | | | | 39,043 10 |
| Cheverlie breakwater extension..... | | 4,497 25 | | | 4,497 25 |
| Church Point, repairs to wharf..... | | | 508 18 | | 508 18 |
| Clark's Harbour protection works..... | | | 769 24 | | 769 24 |
| Cow Bay (Port Morien) harbour imp'ts..... | | 5,021 50 | | | 5,021 50 |
| Cow Bay Run (Osborne's breakwater)..... | | 1,193 79 | | | 1,193 79 |
| Cribbins Point wharf..... | | | 1,633 18 | | 1,633 18 |
| Delaps Cove—breakwater..... | | | 59 76 | | 59 76 |
| Descousse wharf..... | | | 633 00 | | 633 00 |
| Digby harbour—improvements..... | 20,887 50 | 20,882 29 | | | 50,869 79 |
| East Berlin..... | | | 571 78 | | 571 78 |
| East River (Sheet Harbour)..... | | | 116 74 | | 116 74 |
| East River (Pictou Co.)..... | 27,525 81 | | | | 27,525 81 |
| Fort Lawrence..... | | 65 00 | | | 65 00 |
| Fouchu..... | 36,266 21 | | | | 36,266 21 |
| Fox Island beach protection..... | | 79 24 | | | 79 24 |
| French Village..... | | | 132 04 | | 132 04 |
| Frudes Point..... | | | 298 68 | | 298 68 |
| Georgeville wharf..... | | | 783 16 | | 783 16 |
| Grand Etang protection works..... | | 875 58 | | | 875 58 |
| Grass Cove (Iona) Little Bras d'Or Lake —wharf..... | | 2,288 17 | | | 2,288 17 |
| Great Village wharf..... | | | 306 48 | | 306 48 |
| Gros Nez breakwater..... | | 244 38 | | | 244 38 |
| Habitant River (wharf at Canning)..... | | 5,435 06 | | | 5,435 06 |
| Halifax graving dock..... | | | | 10,000 00 | 10,000 00 |
| Hall's Harbour..... | | | 232 73 | | 232 73 |
| Hampton breakwater..... | | | 100 39 | | 100 39 |
| Harbour Bouche wharf..... | | 349 97 | 47 67 | | 397 64 |
| Harbourville breakwater..... | | 2,045 49 | | | 2,045 49 |
| Heatherton protection works..... | | 322 41 | | | 322 41 |
| Irish Cove protection works, &c..... | | 349 95 | 614 02 | | 963 97 |
| Inverness (Broad Cove Mines) harbour improvements..... | | 2,031 31 | | | 2,031 31 |
| Jones Harbour..... | | | 162 33 | | 162 33 |

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PART II.—STATEMENT A.—EXPENDITURE—Continued.

| Name of Work. | Dredging. | Construction and Improvements. | Repairs. | Staff and maintenance. | Total. |
|---|-----------|--------------------------------|----------|------------------------|-----------|
| | § cts. | § cts. | § cts. | § cts. | § cts. |
| HARBOURS AND RIVERS—Con. | | | | | |
| Nova Scotia—Con. | | | | | |
| Kelly's Cove (Yarmouth Co.) extension breakwater..... | | 650 85 | | | 650 85 |
| LaHave river..... | 21,483 22 | | | | 21,483 22 |
| Lawlor's Island, Quar. Station repairs..... | | | 2,333 24 | | 2,333 24 |
| Liscomb breakwater..... | | | 30 42 | | 30 42 |
| Little Brass d'Or..... | 43 05 | | | | 43 05 |
| Little Narrows, North..... | | 3,471 45 | | | 3,471 45 |
| Little River Harbour wharf..... | | 905 71 | | | 905 71 |
| Liverpool..... | 5,286 03 | | | | 5,286 03 |
| Livingston's Cove..... | | | 200 00 | | 200 00 |
| Lower Jordan Bay channel..... | | 2,000 00 | | | 2,000 00 |
| McNair's Cove..... | | 3,755 34 | 269 11 | | 4,024 45 |
| McPiberson Cove (Gt. Bras d'Or) wharf..... | | 4,550 50 | | | 4,550 50 |
| Malignant Cove, protection works..... | | 215 41 | | | 215 41 |
| Marble Mountain, wharf..... | | 967 92 | | | 967 92 |
| Margaree harbour, improvements..... | | 300 08 | | | 300 08 |
| Margaree Island wharf..... | | 1,725 99 | | | 1,725 99 |
| Margaree River shear dams..... | | 245 56 | | | 245 56 |
| Margaretville eastern breakwater..... | | 288 04 | | | 288 04 |
| Margaretville western breakwater..... | | | 358 53 | | 358 53 |
| Meteghan River wharf..... | | | 300 00 | | 300 00 |
| Middle River (lower) shear dams..... | | 1,100 25 | | | 1,100 25 |
| Middle River shear dams (Indian Brook)..... | | 700 00 | | | 700 00 |
| Middle River (Upper)..... | | 401 02 | | | 401 02 |
| Minasville (Dartmouth Point)..... | | 8,187 50 | | | 8,187 50 |
| Minudie..... | | | 327 87 | | 327 87 |
| Mira River wharf (Grand Mira south)..... | | | 724 98 | | 724 98 |
| Monks Head protection works..... | | | 211 97 | | 211 97 |
| Moose Harbour breakwater..... | | 1,799 54 | | | 1,799 54 |
| Morden breakwater..... | | | 399 83 | | 399 83 |
| Mulgrave (Guysboro)..... | 1,947 38 | | | | 1,947 38 |
| New Haven boat landing..... | | 40 00 | | | 40 00 |
| Noel wharf addition..... | | 274 55 | | | 274 55 |
| North Wallace wharf..... | | | 589 00 | | 589 00 |
| Owls Head wharf..... | | 544 96 | | | 544 96 |
| Oyster Pond breakwater..... | | 1,999 85 | | | 1,999 85 |
| Petit de Grat..... | 6,575 88 | | | | 6,575 88 |
| Pictou, I. C. R. dock..... | 3,862 01 | | | | 3,862 01 |
| Pictou Cove..... | | 350 04 | | | 350 04 |
| Plymouth wharf..... | | | 66 41 | | 66 41 |
| Portuguese Cove breakwater..... | | 1,229 34 | 5 00 | | 1,234 34 |
| Port Dufferin breakwater at Smileys Pt..... | | 186 60 | | | 186 60 |
| Porters Lake..... | | 240 91 | | | 240 91 |
| Port Hastings wharf..... | | 11,811 20 | 21 00 | | 11,832 20 |
| Port Hilford..... | | | 10 00 | | 10 00 |
| Port Hood harbour, closing northern entrance..... | | 15,012 31 | | | 15,012 31 |
| Port Hood wharf..... | | 1,392 80 | | | 1,392 80 |
| Port Lorne breakwater..... | | 599 92 | | | 599 92 |
| Port Maitland breakwater..... | | 4,800 73 | | | 4,800 73 |
| Port Mouton..... | 24,941 97 | | 75 00 | | 25,016 97 |
| Port Wade—pier..... | | | 200 00 | | 200 00 |
| Prospect breakwater..... | | | 103 20 | | 103 20 |
| Pugwash harbour..... | | 2,002 95 | | | 2,002 95 |
| Quoddy Island wharf..... | | 998 83 | | | 998 83 |
| Rays Creek..... | | | 68 79 | | 68 79 |
| R-d Island..... | 8,503 50 | | | | 8,503 50 |
| Ross Ferry wharf..... | | | 549 21 | | 549 21 |
| Saulnierville wharf..... | | 99 75 | | | 99 75 |
| Saw Pit wharf..... | | | 50 87 | | 50 87 |
| Scotch Cove breakwater..... | | 311 28 | | | 311 28 |
| Seaside wharf (Inverness Co.)..... | | 692 85 | 41 10 | | 733 95 |
| Skinnars Cove..... | 2,822 19 | | | | 2,822 19 |

1 GEORGE V., A. 1911

PART II.—STATEMENT A.—EXPENDITURE—Continued.

| Name of Work. | Dredging. | Construc- tion and Improvements. | Repairs. | Staff and Main- tenance. | Total. |
|--|------------|--|-----------|--------------------------------|------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| <i>HARBOURS AND RIVERS—Continued.</i> | | | | | |
| <i>Nova Scotia—Concluded.</i> | | | | | |
| South Ingonish..... | 11,207 19 | | | | 11,207 19 |
| South Lake (Lakevale) protection work, &c..... | | 2,017 93 | | | 2,017 93 |
| Spanish Ship Bay..... | | | 33 35 | | 33 35 |
| Spry Harbour wharf..... | | 748 16 | | | 748 16 |
| Spry Bay freight shed..... | | 275 40 | | | 275 40 |
| St. Marys River..... | 5,496 42 | | | | 5,496 42 |
| Swains Point wharf..... | | | 155 57 | | 155 57 |
| Sydney Harbour (Whitney Pier)..... | | 9,996 25 | | | 9,996 25 |
| Sydney (North) N. S. Steel Co. Pier..... | 4,763 36 | | | | 4,763 36 |
| Sydney—Dominion Coal Co. piers..... | 3,156 07 | | | | 3,156 07 |
| Tenecape breakwater..... | | | 6 90 | | 6 90 |
| Tiverton breakwater..... | | 400 20 | | | 400 20 |
| Tupperville wharf..... | | 1,997 49 | | | 1,997 49 |
| Voglers Cove wharf..... | | 1,655 98 | | | 1,655 98 |
| Wallace Bridge wharf..... | | 948 30 | | | 948 30 |
| Washabuck—Lower..... | | 249 99 | | | 249 99 |
| West Archat wharf, warehouse..... | | 145 42 | | | 145 42 |
| West Head (Cape Sable Island)..... | | 792 05 | | | 792 05 |
| Yarmouth Harbor Improvements..... | 88,972 54 | 1,327 43 | | | 90,310 09 |
| Generally..... | 13,470 37 | | | 3,845 34 | 17,315 71 |
| Totals, Nova Scotia..... | 326,253 80 | 198,550 35 | 18,609 11 | 13,845 34 | 557,258 60 |
| <i>Prince Edward Island.</i> | | | | | |
| Belle River breakwater..... | | 497 64 | | | 497 64 |
| Brae Harbour pier..... | | | 300 61 | | 300 61 |
| Chapel pier..... | | | 596 26 | | 596 26 |
| Charlottetown (Marine and Fisheries wharf)..... | 542 24 | | | | 542 24 |
| Charlottetown (Navigation Co. wharf)..... | 1,086 52 | | | | 1,086 52 |
| Charlottetown (Asylum wharf)..... | 1,391 37 | | | | 1,391 37 |
| Charlottetown (Peake and Queens Dock)..... | 825 03 | | | | 825 03 |
| Georgetown..... | 1,103 55 | | | | 1,103 55 |
| Graham's Pond, northern pier..... | | 1,003 77 | | | 1,003 77 |
| Haggerty wharf, shed..... | | 199 53 | 44 19 | | 243 72 |
| Kier's Shors pier..... | | | 46 33 | | 46 33 |
| Miminigash Harbour, extension of northern breakwater..... | | 1,251 16 | | | 1,251 16 |
| Mount Stewart wharf..... | | 545 11 | | | 545 11 |
| Naufrage Pond, protected entrance channel..... | | 13,424 10 | | | 13,424 10 |
| New London breakwater..... | | 1,272 23 | | | 1,272 23 |
| Pinette (Queen's Co.)..... | 2,703 74 | | | | 2,703 74 |
| Port Hill wharf..... | | 15 95 | | | 15 95 |
| Pownal wharf..... | 1,882 44 | | 320 90 | | 2,203 34 |
| Rustico Harbour, breakwater, north side..... | | 115 25 | | | 115 25 |
| Rustico Harbour, breakwater, south side..... | 195 96 | 234 34 | | | 430 30 |
| Souris Harbour..... | 1,643 45 | 174 39 | | | 1,817 84 |
| Sturgeon pier..... | | 3,725 00 | | | 3,725 00 |
| Summerside Harbour, breakwater..... | 5,143 06 | 24,622 00 | | | 29,765 06 |
| Tignish, protection pier..... | | 65 00 | | | 65 00 |
| Vernon River pier (west side)..... | 1,564 88 | 7,578 75 | | | 9,143 63 |
| Victoria (see Crapaud)..... | | | | | |
| Generally..... | 5,909 27 | | | 479 12 | 6,388 39 |
| Totals, Prince Edward Island..... | 23,991 51 | 54,724 22 | 1,308 29 | 479 12 | 80,503 14 |

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PART II.—STATEMENT A.—EXPENDITURE—Continued.

| Name of Work. | Dredging. | Construc- tion and Improvements. | Repairs. | Staff and Main- tenance. | Total. |
|--|-----------|--|----------|--------------------------------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| HARBOURS AND RIVERS—Con. | | | | | |
| <i>New Brunswick.</i> | | | | | |
| Andersons Hollow wharf..... | | | 239 74 | | 239 74 |
| Bathurst..... | 24,931 42 | | | | 24,931 42 |
| Beaver Harbour wharf..... | | 4,844 00 | | | 4,844 00 |
| Belas Basin (see Maces Bay)..... | | | | | |
| Black River wharf..... | | | 111 92 | | 111 92 |
| Buctouche Beach..... | | 2,564 35 | | | 2,564 35 |
| Burnt Church wharf..... | | | 596 38 | | 596 38 |
| Campbellton wharf..... | 5,250 91 | 16,144 98 | | | 21,395 89 |
| Cape Bald breakwater pier..... | | 14,928 69 | | | 14,928 69 |
| Cape Tormentine breakwater..... | | 4,994 02 | | | 4,994 02 |
| Caraquet wharf..... | 13,292 64 | | 133 30 | | 13,425 94 |
| Clauston Pt. (lower Derby)..... | 30 00 | | | | 30 00 |
| Clifton (Stonehaven) breakwater..... | | 1,031 33 | | | 1,031 33 |
| Clifton (Kings Co.)..... | 45 29 | | | | 45 29 |
| Cocagne wharf..... | | | 275 80 | | 275 80 |
| Cummings Cove (Deer Island) wharf..... | | 354 99 | | | 354 99 |
| Dalhousie harbour..... | 31,662 13 | | | | 31,662 13 |
| Dorchester wharf..... | | 851 66 | | | 851 66 |
| Dover (Petitcodiac River) wharfs..... | | 3,199 23 | | | 3,199 23 |
| Gaspereaux river..... | 4,499 60 | | | | 4,499 60 |
| Grande Anse breakwater..... | | 973 34 | | | 973 34 |
| Great Salmon River—groynes and break- water combined..... | | 2,947 23 | | | 2,947 23 |
| Hampton..... | 1,642 25 | | | | 1,642 25 |
| Harvey Bank (Dows wharf)..... | | 3,791 81 | 900 00 | | 4,691 81 |
| Heron Island wharf..... | | 2,424 45 | | | 2,424 45 |
| Herring Cove breakwater..... | | | 143 75 | | 143 75 |
| Jenkins Cove (Kings Co.)..... | 1,269 60 | | | | 1,269 60 |
| Kouchibouguac, harbour improvements..... | | 3,823 72 | | | 3,823 72 |
| Lamèque wharf..... | | 2,665 34 | | | 2,665 34 |
| Leonardville wharf..... | 3,713 60 | 2,663 87 | | | 6,377 47 |
| L'Etéte wharf..... | | | 189 86 | | 189 86 |
| Loggieville..... | 2,156 12 | | | | 2,156 12 |
| Lorneville breakwater wharf..... | | 28,998 98 | | | 28,998 98 |
| Lower Newcasale wharf..... | | 202 63 | | | 202 63 |
| Maces Bay wharf..... | | 393 76 | | | 393 76 |
| Mills Pond wharf..... | | 3,490 00 | | | 3,490 00 |
| Miramichi bay..... | 40,966 90 | | | | 40,966 90 |
| Miramichi River..... | 1,248 10 | | | | 1,248 10 |
| Miramichi S.W..... | 2,072 43 | | | | 2,072 43 |
| Mispec breakwater..... | | 152 00 | | | 152 00 |
| Moncton wharf..... | | 7,045 16 | | | 7,045 16 |
| Neguac..... | | | 5 00 | | 5 00 |
| New Mill wharf..... | | 15 22 | | | 15 22 |
| North Head breakwater wharf (Grand Manan)..... | | 8,447 51 | | | 8,447 51 |
| Oak Point wharf..... | | | 9 59 | | 9 59 |
| Oronoco..... | 28,638 23 | | | | 28,638 23 |
| Petit Rocher breakwater..... | | 413 67 | | | 413 67 |
| Pink Rock wharf (Shepody Bay)..... | | 127 57 | | | 127 57 |
| Pointe du Chene breakwater..... | | | 5,000 71 | | 5,000 71 |
| Port Elgin..... | 1,841 00 | | | | 1,841 00 |
| Quaco Harbour, extension of east pier..... | | 34,928 75 | | | 34,928 75 |
| Richibucto wharf approach (municipi- pality)..... | | | 3,188 56 | | 3,188 56 |
| Richibucto Beach breakwater..... | | 13 00 | | | 13 00 |
| Richibucto Cape..... | | 4,658 41 | | | 4,658 41 |
| Richibucto harbour..... | | 2,488 26 | | | 2,488 26 |
| River St. John and tributaries, improve- ments— | | | | | |
| Andover..... | \$ 208 71 | | | | |
| Beaver Brook..... | 270 25 | | | | |
| Bérubés breakwater..... | 191 31 | | | | |

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PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

| Name of Work. | Dredging. | Construction and Improvements. | Repairs. | Staff and Maintenance. | Total. |
|---|-------------|--------------------------------|----------|------------------------|------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| HARBOURS AND RIVERS—Con. | | | | | |
| <i>New Brunswick—Con.</i> | | | | | |
| River St. John and tributaries, improvements— <i>Con.</i> | | | | | |
| Blue Mountain Bend..... | 384 12 | | | | |
| Cross Lake Rapid..... | 196 50 | | | | |
| Emmerson's Falls..... | 109 90 | | | | |
| Grand Falls..... | 199 60 | | | | |
| Grand River..... | 199 00 | | | | |
| Green River..... | 169 25 | | | | |
| Grondins..... | 76 35 | | | | |
| Guetteite..... | 201 45 | | | | |
| Little River..... | 526 65 | | | | |
| Lower St. John, snagging..... | 917 59 | | | | |
| Maugerville..... | 9 00 | | | | |
| Nictau Lake..... | 151 00 | | | | |
| Ottallie stream..... | 81 25 | | | | |
| Serpentine River..... | 300 76 | | | | |
| Sissou's Brook..... | 100 00 | | | | |
| Trout River..... | 93 50 | | | | |
| Turners..... | \$ 300 00 | | | | |
| Tweeddales breakwater..... | 399 78 | | | | |
| Wapskelegan..... | 569 75 | | | | |
| Wright..... | 296 55 | | | | |
| Generally..... | 976 92 | | | | |
| | | 6,935 19 | | | 6,935 19 |
| River St. John, half cost of contribution to local government for wharfs— | | | | | |
| Brown's Flat wharf..... | \$ 988 50 | | | | |
| Douglas Harbour..... | 624 70 | | | | |
| Queenstown high water wharf..... | 803 75 | | | | |
| Waterboro low water wharf..... | 442 50 | | | | |
| | | 2,869 45 | | | 2,869 45 |
| River St. John, construction of wharfs— | | | | | |
| Barker's..... | \$ 2,889 04 | | | | |
| Beaton, low water wharf..... | 1,659 34 | | | | |
| Chases Point..... | 194 26 | | | | |
| Guimonds..... | 61 05 | | | | |
| Iron Bound Cove..... | 798 80 | | | | |
| Long Island..... | 298 07 | | | | |
| Lower Jemseg..... | 2,389 93 | | | | |
| Mather's Island..... | 473 59 | | | | |
| McAllisters..... | 1,236 67 | | | | |
| McGowaus (Sheffield)..... | 29 75 | | | | |
| Milford..... | 85 75 | | | | |
| Newcastle creek wharf..... | 1,233 79 | | | | |
| Oromocto, high water..... | 1,312 40 | | | | |
| Rothsay..... | 442 83 | | | | |
| Scotchtown..... | 2,888 30 | | | | |
| Salmon River..... | 50 00 | | | | |
| The Range..... | 1,389 22 | | | | |
| Young's Cove wharf..... | 2,801 44 | | | | |
| Generally..... | 4 50 | | | | |
| | | 20,228 82 | | | 20,228 82 |
| River St. John, survey between Fred-ericton and Woodstock..... | | 3,356 33 | | | 3,356 33 |
| St. Andrews wharf..... | 11,574 87 | 14,982 00 | | | 26,556 87 |
| St. George wharf..... | | 1,424 16 | | | 1,424 16 |
| Sackville wharf..... | | 20 75 | | | 20 75 |
| St. John Harbour, entrance..... | 28,524 43 | | | | 28,524 43 |
| Saud Point..... | 5,861 24 | 190,328 00 | | | 196,189 24 |
| Foul ground..... | 2,601 50 | | | | 2,601 50 |
| Beacon Bar..... | 264,536 95 | | | | 264,536 95 |
| Ballast wharf..... | 2,416 18 | 308 92 | | | 2,725 10 |

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PART II.—STATEMENT A.—EXPENDITURE—Continued.

| Name of Work, | Dredging. | Construction and Improvement. | Repairs. | Staff and Maintenance. | Total. |
|--|------------|-------------------------------|----------|------------------------|--------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| HARBOURS AND RIVERS—Continued. | | | | | |
| <i>New Brunswick—Con.</i> | | | | | |
| St. John Harbour—Con. | | | | | |
| Partridge Island..... | | 6 75 | | | 6 75 |
| Negro Point breakwater..... | | 20,397 63 | | | 20,397 63 |
| Courtenay Bay, test borings..... | | 3,231 41 | | | 3,231 41 |
| Fort Dufferin..... | | 10 00 | | | 10 00 |
| Winterport berths..... | 8,222 93 | | | | 8,222 93 |
| St. Louis wharf..... | 444 58 | | 555 37 | | 999 95 |
| St. Paul, (Lower Caraquet) wharf..... | | 13,817 90 | | | 13,817 90 |
| Scotchtown..... | | | 13 17 | | 13 17 |
| Seal Cove, breakwater-pier (Grand Manan Island)..... | | 29,546 00 | | | 29,546 00 |
| Shampers (Kings Co.)..... | 5,303 76 | | | | 5,303 76 |
| Shediac wharf..... | | 282 11 | | | 282 11 |
| Shippegan Gully..... | | 3,551 98 | | | 3,551 98 |
| Stonehaven (see Clifton)..... | | | | | |
| Tabucintac..... | 2,058 45 | | | | 2,058 45 |
| Tracadie, protection works, &c..... | | 664 41 | | | 664 41 |
| Traverse (Restigouche Co.)..... | 6,742 13 | | | | 6,742 13 |
| Wannamakers (Kings Co.)..... | 109 02 | | | | 109 02 |
| Welchpool (Campbello Island) wharf..... | | 18,725 45 | | | 18,725 45 |
| Whitehead (Grand Manan) wharf..... | | 5,196 75 | | | 5,196 75 |
| Wilson's Beach (Campbello)..... | | | 141 52 | | 141 52 |
| Generally..... | 13,380 37 | | | 7,670 49 | 21,050 86 |
| Totals, New Brunswick..... | 515,036 63 | 498,650 50 | 8,316 11 | 7,670 49 | 1,029,673 73 |
| <i>Quebec.</i> | | | | | |
| Amherst (Magdalen Isd.)..... | | 1,186 68 | | | 1,186 68 |
| Anse à la Barbe breakwater..... | | 2,360 00 | | | 2,360 00 |
| " à Beau—fils breakwater extension..... | | 2,707 41 | | | 2,707 41 |
| " aux Gascons wharf..... | | 1,994 91 | | | 1,994 91 |
| " à la Louise, removal of rocks..... | | 100 30 | | | 100 30 |
| " à l'Eau (see Tadoussac)..... | | | 182 09 | | 182 09 |
| " à la Grosse Roche (Saguenay)..... | | | 258 58 | | 258 58 |
| " à l'Islet pier..... | | 2,146 01 | | | 2,146 01 |
| " St. Jean wharf..... | | | 23 30 | | 23 30 |
| " du Cap (Cape Cove) breakwater..... | | | 75 12 | | 75 12 |
| Aylmer (Lake Deschene)..... | 2,887 70 | | | | 2,887 70 |
| Baie Lavallière..... | 605 82 | | | | 605 82 |
| Baie St. Paul, Cap aux Corbeaux, wharf..... | | 2,894 22 | | | 2,894 22 |
| Barachois de Malbaie pier..... | | 1,936 26 | | | 1,936 26 |
| Batiscan (R. & O. wharf)..... | | | 39 00 | | 39 00 |
| Beauport wharf..... | | 54 58 | | | 54 58 |
| Berthierville..... | 1,756 12 | | | | 1,756 12 |
| Bic (old wharf)..... | | | 199 85 | | 199 85 |
| Bic Harbour, wharf at Pointe à Côté..... | | | 50 00 | | 50 00 |
| Black Cape (Campbell's Beach, Bonaventure Co.) .. | | | 253 87 | | 253 87 |
| Cacouna wharf..... | | 355 87 | | | 355 87 |
| Cannes de Roches..... | | | 28 01 | | 28 01 |
| Canton Fabre wharf, (Lake Temiscaming)..... | | | 179 57 | 6 55 | 186 12 |
| Cap à l'Aigle..... | | | 26 96 | | 26 96 |
| Cap Chatte (Anse Blanche) training pier..... | | 2,031 50 | | | 2,031 50 |
| Cap St. Ignace wharf..... | | 15,553 55 | | | 15,553 55 |
| Caplan (McMillan's Beach)..... | | | 298 46 | | 298 46 |
| Carleton wharf..... | | 1,225 34 | | | 1,225 34 |
| Caughnawaga..... | 437 70 | | | | 437 70 |
| Chateau Richer wharf..... | | | 3 87 | | 3 87 |
| Chicoutimi Harbour improvements..... | 12,675 13 | 13,911 78 | | | 26,586 91 |
| Contrecoeur wharf..... | | 45 00 | | | 45 00 |

1 GEORGE V., A. 1911

PART II.—STATEMENT A.—EXPENDITURE—Continued.

| Name of Work. | Dredging. | Construction and Improvements. | Repairs. | Staff and Maintenance. | Total. |
|--|-----------|--------------------------------|----------|------------------------|------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| HARBOURS AND RIVERS—Con. | | | | | |
| Quebec—Con. | | | | | |
| Coteau Landing wharf..... | | | 395 13 | | 395 13 |
| Crane Island (northside)..... | | | 12 50 | | 12 50 |
| Doucet's Landing, pile wharf..... | 2,272 84 | 1,200 00 | | | 3,472 84 |
| Douglstown pier, addition..... | | 1,352 88 | | | 1,352 88 |
| East Templeton wharf..... | | | 18 50 | | 18 50 |
| Escoumains pier, extension..... | | 4,040 63 | | | 4,040 63 |
| Fraserville (see R. du Loup en bas)..... | | | | | |
| Father Point wharf, repairs..... | | | 993 85 | | 993 85 |
| Gaspé, deep water wharf..... | | 432 43 | | | 432 43 |
| Georgeville wharf..... | | | 40 45 | | 40 45 |
| Gatineau Point..... | | | 101 55 | | 101 55 |
| Graham..... | 339 97 | | | | 339 97 |
| Grande Entrée (Magdalen Isds.)..... | | 50 55 | | | 50 55 |
| Grande Rivière de Gaspé, repairs to wharf..... | | | 1,645 49 | | 1,645 49 |
| Grenville..... | 688 90 | | | | 688 90 |
| Grindstone (Magdalen Isds.)..... | | 1,576 29 | | | 1,576 29 |
| Grondines wharf..... | | | 20 00 | | 20 00 |
| Grosse Isle quar. stn., hospital wharf..... | | | 2,533 68 | | 2,533 68 |
| Hulson wharf..... | 1,569 30 | | 83 03 | | 1,652 33 |
| Hull wharf..... | | | | 202 25 | 202 25 |
| Iberville..... | | | 16 73 | | 16 73 |
| Ile aux Couleures wharf..... | | | 509 23 | | 509 23 |
| Ile aux Noix (St. John's)..... | | | 111 40 | | 111 40 |
| Ile d'Alma (Petite Décharge)..... | | 498 03 | | | 498 03 |
| Ile Perrot wharf, north side..... | | | 342 72 | | 342 72 |
| Ile du Parad (Co. Berthier)..... | 745 24 | | | | 745 24 |
| Ile Verte wharf..... | | | 1,000 54 | | 1,000 54 |
| Ile Madame (Co. Berthier)..... | 197 36 | | | | 197 36 |
| Jersey Cove (Co. Gaspé)..... | | | 75 04 | | 75 04 |
| Kamouraska wharf..... | | | 12 25 | | 12 25 |
| Lake St. John Piers, Generally..... | | | | 1,032 53 | 1,032 53 |
| Lake Temiskamingue..... | 2,302 94 | | | | 2,302 94 |
| Lake Temiskamingue, Long Sault dam..... | 6,726 94 | | | | 6,726 94 |
| Lanoraie..... | | | 29 08 | | 29 08 |
| Laprairie, ice piers..... | | 853 00 | 382 27 | | 1,235 27 |
| La Tuque, wharf on St. Maurice river..... | | 622 24 | | | 622 24 |
| Les Eboulements..... | | | 1,647 41 | | 1,647 41 |
| Levis, graving dock..... | | | | 14,776 77 | 14,776 77 |
| Levis, deep water wharf, &c..... | | 350,195 93 | | | 350,195 93 |
| Little Pabos..... | | | 25 00 | | 25 00 |
| Little River, East..... | | | 211 70 | | 211 70 |
| Little River, West..... | | | 50 00 | | 50 00 |
| Lotbinière wharf..... | | 1,054 31 | | | 1,054 31 |
| Louiseville (see Rivière du Loup en haut)..... | | | | | |
| Magog wharf..... | | | 356 28 | | 356 28 |
| Malbaie (Gaspé), boat shelter..... | | 25 30 | | | 25 30 |
| Maria Cape, beach protection..... | 1,160 10 | | | | 1,160 10 |
| Maskmonge (see River Maskinonge)..... | | | | | |
| Matane breakwater..... | | 375 23 | | | 375 23 |
| Mille Vaches, removal of boulders..... | | 501 16 | | | 501 16 |
| Mistook wharf..... | | | 1,021 81 | | 1,021 81 |
| Montmagny, wharf in the basin..... | | | 120 35 | | 120 35 |
| Montmorency wharf..... | | | 24 02 | | 24 02 |
| Moose Bay (Lake Mégantic)..... | | | 80 83 | | 80 83 |
| Murray Bay wharf..... | | 5,453 23 | | | 5,453 23 |
| Natahouan, breakwater pier..... | | 1,998 80 | | | 1,998 80 |
| New Carlisle, wharf..... | | | 2,988 22 | | 2,988 22 |
| Newport..... | | | 1 50 | | 1 50 |
| Nicolet harbour..... | | | 2,998 00 | | 2,998 00 |
| Norway Bay, wharf (Riv. Ottawa)..... | | 27 25 | | | 27 25 |
| Notre Dame de la Salette..... | 1,306 79 | | | 1,255 33 | 2,562 12 |
| Notre Dame du Laus..... | | | | 25 00 | 25 00 |

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

| Name of Work. | Dredging. | Construction and Improvements. | Repairs. | Staff and Maintenance. | Total. |
|---|-------------|--------------------------------|----------|------------------------|------------|
| HARBOURS AND RIVERS—Con. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| <i>Quebec—Con.</i> | | | | | |
| Papineauville..... | 543 30 | | | | 543 30 |
| Paspébiac, east breakwater..... | | 170 15 | | | 170 15 |
| Perce wharf, (North Cove) .. | | | 21 37 | | 21 37 |
| Pierreville..... | 1,408 42 | | 9 60 | | 1,418 02 |
| Piopolis (Lake Megantic)..... | | | 103 19 | | 103 19 |
| Pointe à Brousseau, wharf..... | | 1,261 65 | | | 1,261 65 |
| Pointe à Elie (Magdalen Isds.) .. | | 7,185 78 | | | 7,185 78 |
| Pointe aux Trembles (en haut)..... | | 2,140 92 | | | 2,140 92 |
| Pointe aux Trembles (Portneuf)..... | | | 13 45 | | 13 45 |
| Pointe Fortune, wharf..... | | | 590 70 | | 590 70 |
| Pointe Claire..... | | | 150 00 | | 150 00 |
| Pointe à Piché, wharf (Témiskamingue)..... | | | 1,208 64 | 5 00 | 1,213 64 |
| Poltimore, wharf..... | | | 9 17 | | 9 17 |
| Port Daniel, wharf..... | | | 2,497 49 | | 2,497 49 |
| Port Daniel, centre..... | | | 99 98 | | 99 98 |
| Quebec Harbour | | | | | |
| Louise Basin..... | 1,635 04 | 6,351 36 | | | 7,986 40 |
| Rivière St. Charles, estuary..... | 1,024 98 | 261,833 48 | | | 262,858 46 |
| Repentigny, wharf..... | | 350 59 | | | 350 59 |
| Rigaud, wharf..... | 5,222 80 | 1,495 58 | 16 50 | | 6,734 88 |
| Rimouski, wharf..... | 4,278 70 | 7,336 09 | | 891 46 | 12,506 25 |
| Rivière à la Pipe..... | | 1,667 50 | | | 1,667 50 |
| Rivière Batiscan..... | 5,873 80 | | | | 5,873 80 |
| Rivière Blanche, wharf extension..... | | 6,979 90 | | | 6,979 90 |
| Rivière Bonaventure, training pier..... | | 8,350 07 | | | 8,350 07 |
| Rivière Caplan, protection piers..... | | | 519 55 | | 519 55 |
| Rivière du Lièvre, lock..... | 2,613 60 | | 1,612 88 | 1,805 77 | 6,032 25 |
| Rivière des Bergeronnes..... | | 811 54 | | | 811 54 |
| Rivière du Loup (Fraserville)..... | 7,462 35 | | 5,929 96 | | 13,392 31 |
| Rivière du Loup (Louiseville)..... | 6,932 09 | | 4 80 | | 6,936 89 |
| Rivière du Sud, retaining wall..... | | 1,547 55 | | | 1,547 55 |
| Rivière Godefroy..... | | | 4 00 | | 4 00 |
| l'Assomption..... | 4,570 59 | | 150 00 | | 4,720 59 |
| Rivière Ottawa— | | | | | |
| Storage Dams— | | | | | |
| Rivière Kippewa, dam..... | \$17,762 22 | | | | |
| Rivière Témiskamingue, dam..... | 35,824 25 | | | | |
| Rivière Quinze Rapids, investigation..... | 10,983 23 | | | | |
| Water sheds generally..... | 372 85 | | | | |
| | | 64,942 55 | | | 64,942 55 |
| Rivière Mistassini (Lake St. John)..... | | | 3 25 | | 3 25 |
| Ouelle wharf..... | | 3,954 49 | | | 3,954 49 |
| Richelieu, improvements..... | 21,674 96 | 36,145 37 | | 2,248 88 | 60,069 21 |
| Richelieu, St. Denis wharf..... | | 2,779 77 | | | 2,779 77 |
| Saguenay..... | 27,736 71 | | | | 27,736 71 |
| St. Charles (see Quebec Harbour)..... | | | | | |
| St. Francis (St. Francois du Lac)..... | 4,832 12 | 4,195 15 | | | 9,027 27 |
| St. Jacques (see Laprairie)..... | | | | | |
| Rivière St. Louis, improvements..... | 6,333 82 | | | | 6,333 82 |
| St. Louis, head gate..... | | | | 110 00 | 110 00 |
| St. Maurice, channel between Grandes Piles and La Tuque..... | 15,721 06 | | | | 15,721 06 |
| St. Maurice (mouth)..... | 459 00 | | | | 459 00 |
| Roberval (Lake St. John)..... | 4,920 04 | | | | 4,920 04 |
| Ruisseau à Sem, removal of boulders..... | | 400 00 | | | 400 00 |
| St. Alexis Baie des Ha Ha, wharf..... | | | 313 59 | | 313 59 |
| St. Alphonse de Bagotville, addition to wharf (south side)..... | | 21,091 36 | | | 21,091 36 |
| St. André de Kamouraska..... | | | 7 15 | | 7 15 |
| Ste. Anne du Saguenay, wharf..... | | | 2,498 97 | | 2,498 97 |
| des Monts, harbour improvements..... | 508 48 | 2,652 91 | | | 3,161 39 |

1 GEORGE V., A. 1911

PART II.—STATEMENT A.—EXPENDITURE—Continued.

| Name of Work. | Dredging. | Construc- tion and Improve- ments. | Repairs. | Staff and Main- tenance. | Total. |
|---|------------|---|-----------|--------------------------------|--------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| HARBOURS AND RIVERS.—Con. | | | | | |
| <i>Quebec—Con.</i> | | | | | |
| St. Charles de Borromée..... | | 439 44 | | | 439 44 |
| " de Caplan..... | | | 150 00 | | 150 00 |
| " de Limoilou..... | | | 240 00 | | 240 00 |
| Ste. Croix..... | | | 43 66 | | 43 66 |
| St. Denis (see River Richelieu)..... | | | | | |
| St. Elzé (River à la Loupe) wharf..... | | 999 15 | | | 999 15 |
| Ste. Famille d'Orléans..... | | 262 57 | | | 262 57 |
| St. François d'Orléans, wharf..... | | 1,038 00 | | | 1,038 00 |
| Ste. Emélie (Leclercville)..... | | | 140 59 | | 140 59 |
| St. Fulgence wharf..... | | 1,017 55 | | | 1,017 55 |
| St. Gédéon wharf..... | | | 299 90 | | 299 90 |
| St. Ignace de Loyola wharf..... | | 999 37 | | | 999 37 |
| St. Irénée wharf..... | | | 26 89 | | 26 89 |
| St. Hilaire wharf (River Richelieu)..... | | 1,113 29 | | | 1,113 29 |
| St. Jean des Chaillons..... | 170 04 | 1,752 78 | | | 1,922 82 |
| St. Jean d'Orléans wharf..... | | | 89 89 | | 89 89 |
| St. Joseph Letellier wharf, 7 Islands..... | | 1,998 44 | | | 1,998 44 |
| St. Jerome wharf..... | | | 25 26 | | 25 26 |
| St. Laurent d'Orléans wharf..... | | | 124 50 | | 124 50 |
| St. Liguori ice breaker..... | | 1,207 50 | | | 1,207 50 |
| St. Mathias, approach to wharf..... | | 31 60 | | | 31 60 |
| St. Michael de Bellechasse wharf..... | 4,169 60 | | 17 00 | | 4,186 60 |
| St. Michel Yamaska (see Yamaska)..... | | | | | |
| St. Nicholas wharf..... | | | 2,849 39 | | 2,849 39 |
| St. Omer, landing pier..... | | 190 00 | | | 190 00 |
| St. Omer, les Becquets..... | 7,486 12 | | | | 7,486 12 |
| St. Placide..... | 7,077 84 | | | | 7,077 84 |
| St. Siméon wharf..... | | | 2,044 74 | | 2,044 74 |
| St. Sulpice wharf..... | | 1,169 75 | | | 1,169 75 |
| St. Zotique wharf..... | | 245 61 | | | 245 61 |
| Sault au Mouton..... | | | 495 29 | | 495 29 |
| Sabrevois..... | | | 280 24 | | 280 24 |
| Sandy Bay..... | | | 385 66 | | 385 66 |
| Sorel (Ste. Anne)..... | | | 686 30 | | 686 30 |
| Sorel harbour..... | 224 21 | 72,950 73 | 30 85 | | 73,205 79 |
| Tadoussac wharf..... | | 1,342 67 | | | 1,342 67 |
| Varennes wharf..... | | 440 00 | | | 440 00 |
| Vaudreuil..... | 2,690 63 | | | | 2,690 63 |
| Verchères wharf..... | | 339 99 | | | 339 99 |
| Verdun..... | 11,164 44 | | 10 00 | | 11,174 44 |
| Ville Marie wharf (Témiskamingue)..... | 861 93 | | 123 02 | | 984 95 |
| Yanachiche..... | 4,474 17 | | 39 00 | | 4,513 17 |
| Yamaska lock and dam..... | | | 592 79 | 1,738 64 | 2,332 43 |
| Yamaska river..... | 5,455 50 | | | | 5,455 50 |
| Yamaska, St. Michel landing pier..... | | 5,172 89 | | | 5,172 89 |
| Generally..... | 52,588 84 | | | 27,126 25 | 79,715 09 |
| Totals, Quebec..... | 254,627 93 | 956,266 86 | 43,936 85 | 51,225 43 | 1,306,057 07 |
| <i>Ontario.</i> | | | | | |
| Amherstburg wharf..... | | 486 63 | | | 486 63 |
| Arnprior wharf..... | | 4,905 97 | | | 4,905 97 |
| Barrie wharf..... | | | 25 00 | | 25 00 |
| Belle river pier..... | | | 246 35 | | 246 35 |
| Belleville harbour..... | 300 00 | | | | 300 00 |
| Bewdley wharf..... | | 1,244 68 | | | 1,244 68 |
| Black Rapids (Rideau River)..... | 1,040 63 | | | | 1,040 63 |
| Blanche River, improvements..... | | 5,941 01 | | | 5,941 01 |
| Blind River, reconstruction of wharf, &c..... | | 3,861 64 | | | 3,861 64 |
| Bowmanville harbour..... | 2,609 75 | | | | 2,609 75 |
| Bruce Mines pier, repairs..... | | | 127 10 | | 127 10 |

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

| Name of Work. | Dredging. | Construction and Improvements. | Repairs. | Staff and Maintenance. | Total. |
|---|------------|--------------------------------|----------|------------------------|------------|
| HARBOURS AND RIVERS. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| <i>Ontario—Con.</i> | | | | | |
| Burks Falls, wharf improvements..... | | 441 03 | | | 441 03 |
| Burleigh Falls, wharf repairs..... | | | 545 70 | | 545 70 |
| Burlington channel, piers..... | | 38,851 84 | 142 09 | 2,483 43 | 41,477 36 |
| Cape Croker wharf..... | | 1,468 34 | | | 1,468 34 |
| Cobourg harbour..... | 10,349 22 | 49,650 43 | | | 59,999 65 |
| Collingwood harbour..... | 91 00 | | | | 91 00 |
| Collingwood, graving dock..... | | | | 15,000 00 | 15,000 00 |
| Cumberland wharf..... | | | 22 35 | | 22 53 |
| Detroit river, protection of east bk' water..... | | 1,000 00 | | | 1,000 00 |
| Dyer Bay wharf..... | 17 54 | | | | 17 54 |
| Fort William (Kaministiquia River)..... | 734,141 84 | 95,636 34 | | | 829,778 18 |
| Frenchman's Bay (Co. Ontario)..... | 1,151 41 | | | | 1,151 41 |
| Goderich Harbour, repairs to piers..... | 15,405 10 | | 5,020 57 | | 20,425 67 |
| Grand Bend, reconstruction of approach..... | | 1,630 17 | | | 1,630 17 |
| Gravenhurst (Lake Muskoka) wharf..... | | 64 43 | | | 64 43 |
| Haileybury (Lake Temiskamingue) wharf..... | | | 149 15 | 145 30 | 294 45 |
| Hamilton harbour..... | 2,007 89 | | | | 2,007 89 |
| Hawkestone wharf..... | | | 62 16 | | 62 16 |
| Hawkesbury (Ottawa River)..... | 2,136 04 | | | | 2,136 04 |
| Hilton (St. Joseph's Isd.) wharf..... | | | 1,797 03 | | 1,797 03 |
| Hogg's Back (Rideau Canal)..... | 389 52 | | | | 389 52 |
| Huntsville wharf..... | | | 53 00 | | 53 00 |
| Kincairdine harbour..... | 4,180 00 | | 999 63 | | 5,179 63 |
| Kingston harbour..... | 3,292 19 | | | | 3,292 19 |
| Kingston, graving dock..... | | | | 7,222 64 | 7,222 64 |
| Kingsville harbour..... | 2,140 95 | | | | 2,140 95 |
| Lake Nipissing, roller dams at outlets..... | | 5,407 82 | | | 5,407 82 |
| Lancaster wharf..... | | | 996 54 | | 996 54 |
| Leamington wharf..... | | | 455 59 | | 455 59 |
| Lion's Head wharf..... | | 2,256 00 | | | 2,256 00 |
| Little Current (northern channel)..... | 68,618 61 | | | | 68,618 61 |
| L'Original (Ottawa River)..... | 332 52 | 2,054 44 | | | 2,386 96 |
| Mallorytown, wharf repairs..... | | | 2,861 92 | | 2,861 92 |
| Matchedash Bay (Fesserton and Wau-bashene channel)..... | 14,810 17 | | | | 14,810 17 |
| McGregor's Creek, bank protection works at Chatham..... | | | 6,996 50 | | 6,996 50 |
| Michipicoten wharf (Lake Superior)..... | | | 10 00 | | 10 00 |
| Midland harbour improvements (Tiffin elevator)..... | 147,548 16 | | | | 147,548 16 |
| Montreal River (Latchford dam)..... | | 2,565 85 | | | 2,565 85 |
| Napanee harbour..... | 2,990 25 | | | | 2,990 25 |
| Newcastle harbour..... | 105 11 | | | | 105 11 |
| New Eblinburg (Ottawa River)..... | 1,455 34 | | | | 1,455 34 |
| New Liskeard (Lake Temiskamingue)..... | 1,892 32 | | | | 1,892 32 |
| Niagara-on-the-Lake..... | 5,340 17 | | | | 5,340 17 |
| Nipigon River..... | 234 86 | | | | 234 86 |
| Oshawa, repairs to sheds in harbour..... | | | 583 28 | | 583 28 |
| Owen Sound harbour..... | 750 00 | | 50 00 | | 800 00 |
| Pelee Island, western dock..... | | 5,444 86 | | | 5,444 86 |
| " north dock..... | 5,350 53 | | 34 00 | | 5,384 53 |
| Pembroke wharf..... | | | 280 39 | | 280 39 |
| Penetanguishene, repairs to wharf..... | | | 685 20 | | 685 20 |
| Point Edward (St. Clair River)..... | 14,998 52 | | | | 14,998 52 |
| Port Arthur harbour..... | 86,783 51 | 108,437 75 | | | 195,221 26 |
| Port Bruce pier..... | | | 399 56 | | 399 56 |
| Port Burwell harbour..... | 20,853 51 | | 1,038 51 | | 21,892 02 |
| Port Colborne harbour..... | 103 50 | | 346 45 | | 449 95 |
| Port Findlay, wharf repairs..... | | | 1,213 79 | | 1,213 79 |
| Port Hope harbour..... | 5,940 87 | | 3,112 16 | | 9,053 03 |
| Port Rowan wharf..... | | | 499 27 | | 499 27 |
| Portsmouth breakwater repairs..... | | | 535 95 | | 535 95 |
| Port Stanley harbour..... | 4,332 09 | 35,933 88 | | | 40,265 97 |

1 GEORGE V., A. 1911

PART II.—STATEMENT A.—EXPENDITURE—Continued.

| Name of Work. | Dredging. | Construction and Improvements. | Repairs. | Staff and Maintenance. | Total. |
|---|--------------|--------------------------------|-----------|------------------------|--------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| HARBOURS AND RIVERS. | | | | | |
| <i>Ontario—Concluded.</i> | | | | | |
| Port Stanley groynes on east side of harbour entrance..... | | 7,226 19 | | | 7,226 19 |
| Providence Bay, wharf..... | | 200 00 | 306 53 | | 506 53 |
| Rainy River (mouth)..... | 350 15 | | | | 350 15 |
| Rastoule Bay (Lake Nipissing)..... | 716 11 | | | | 716 11 |
| Richard's Landing, St. Joseph's Island, repairs to pier..... | | | 1,700 60 | | 1,700 60 |
| River Otonabee, wharf at Peterboro..... | 894 00 | 653 55 | | | 1,547 55 |
| River Thames, wharf at mouth..... | | 820 75 | | | 820 75 |
| River St. Lawrence, Thousand Islands (Pavilions)..... | | 655 00 | | | 655 00 |
| River St. Lawrence, between Kingston and Brockville..... | 15,916 53 | | | | 15,916 53 |
| Roche's Point wharf..... | | 146 42 | | | 146 42 |
| Rockland (River Ottawa)..... | 1,129 06 | | | | 1,129 06 |
| Rondeau harbour..... | 11,550 99 | 24,616 64 | | | 36,167 63 |
| Roseneath (Rice Lake) wharf..... | | | 25 00 | | 25 00 |
| Rosseau wharf..... | | | 464 92 | | 464 92 |
| Saugen River, piers at mouth, repairs..... | | | 498 54 | | 498 54 |
| Sault Ste. Marie, wharf..... | 69,443 04 | | | | 69,443 04 |
| Severn River, Washago..... | | | 39 98 | | 39 98 |
| Sheguindah wharf..... | | | 500 39 | | 500 39 |
| Silver Centre (Lake Temiskamingue) wharf..... | | 3,903 94 | | 10 95 | 3,916 89 |
| Southampton, extension and repairs to town dock..... | | 5,723 33 | 341 67 | | 6,065 00 |
| South Nation River, improvements..... | | 2,756 66 | | | 2,756 66 |
| South River (see Nipissing village.) | | | | | |
| Sturgeon Falls..... | 1,951 28 | | | | 1,951 28 |
| " River..... | 3,014 40 | | | | 3,014 40 |
| Sydenham River (Chenal Ecarté)..... | 1,589 56 | | 27 00 | | 1,607 56 |
| Telegraph and Nigger Islands (near Trenton)..... | 17,678 80 | | | | 17,678 80 |
| Thessalon harbour..... | 5,346 50 | | 736 17 | | 6,082 67 |
| Tiffin Harbour improvements (see Midland harbour improvements)..... | | 2,211 98 | | | 2,211 98 |
| Tobermory harbour..... | | 104,675 84 | | | 278,687 38 |
| Toronto, harbour improvements..... | 174,011 54 | | 54 27 | | 54 27 |
| Treadwell wharf..... | | | | | |
| Victoria harbour..... | 185,688 35 | | | | 185,688 35 |
| Wallaceburg (Sydenham river)..... | 4,722 94 | | | | 4,722 94 |
| Washago (see Severn river)..... | | 1,663 61 | | | 1,663 61 |
| Wendover, ice-breaking pier..... | | | 177 52 | | 5,389 94 |
| Whitby harbour..... | 5,212 42 | | | | 14,814 15 |
| Wingfield basin..... | 14,814 15 | | | | 43,391 96 |
| Generally..... | 31,318 84 | | | 12,073 12 | |
| Totals, Ontario..... | 1,707,032 78 | 522,479 02 | 34,161 83 | 36,935 44 | 2,300,609 07 |
| <i>Manitoba.</i> | | | | | |
| Brokenhead..... | 3,552 35 | | | | 3,552 35 |
| Grand Marais..... | 759 10 | | | | 759 10 |
| Gypsumville..... | 410 10 | | | | 410 10 |
| Islandic river..... | 1,851 95 | | | | 1,851 95 |
| Mossy river (Winnipegosis)..... | 1,964 34 | | | | 1,964 34 |
| Mossy river (Lake Dauphin)..... | 3,423 30 | | 20 95 | | 3,444 25 |
| Oak Point (Lake Manitoba)..... | 2,030 30 | | | | 2,030 30 |
| Red river (at mouth)..... | | 1,022 84 | | | 1,022 84 |
| Red river, St. Andrew's Rapids..... | 7 187 79 | 599,995 39 | | | 607,183 18 |
| St. Laurent, protection works..... | | 513 30 | | | 513 30 |
| Selkirk wharf..... | 1,120 50 | 375 00 | | | 1,495 50 |
| Siglunes..... | 920 61 | | | | 920 61 |
| Swan Creek..... | 758 69 | | | | 758 69 |

SESSIONAL PAPER No. 19

PART II.—STATEMENT A.—EXPENDITURE—Continued.

| Name of Work. | Dredging. | Construction and Improvements. | Repairs. | Staff and Maintenance. | Total. |
|--|---------------|--------------------------------|---------------|------------------------|---------------|
| HARBOURS AND RIVERS. | 8 cts. | 8 cts. | 8 cts. | 8 cts. | 8 cts. |
| <i>Manitoba—Con.</i> | | | | | |
| White Mud river (mouth) | 781 82 | | | | 781 82 |
| Winnipeg, Beach harbour, pier | | 45 60 | | | 45 60 |
| Generally | 153 46 | | | 2,891 27 | 3,044 73 |
| Totals, Manitoba | 24,014 31 | 601,952 13 | 20 95 | 2,891 27 | 628,878 66 |
| <i>Saskatchewan, Alberta and Northwest Territories.</i> | | | | | |
| Last Mountain lake | | 73,785 24 | | | 73,785 24 |
| Lesser Slave river, improvements | | 10,128 04 | | | 10,128 04 |
| North Saskatchewan river, opposite Prince Albert | 2,131 34 | 2,869 47 | | | 5,000 81 |
| Generally | | | | 3,636 33 | 3,636 33 |
| Totals, Saskatchewan, Alberta and Northwest Territories | 2,131 34 | 86,782 75 | | 3,636 33 | 92,550 42 |
| <i>British Columbia.</i> | | | | | |
| Columbia River— | | | | | |
| Above Golden, \$5,233.22, at Revelstoke, \$14,445.92 | 19,679 14 | | | | 19,679 14 |
| Coquitlam River | 1,484 57 | | | | 1,484 57 |
| Esquimalt, graving dock | | | | 15,100 35 | 15,100 35 |
| Fort George Canyon | 2,597 56 | | | | 2,597 56 |
| Fraser River, improvements | 68,175 94 | 22,965 51 | 1,999 75 | | 93,141 20 |
| Ladysmith, wharf repairs | | | 1,962 16 | | 1,962 16 |
| Naas River | 2,768 21 | | | | 2,768 21 |
| Nanaimo harbour | 5,262 05 | | | | 5,262 05 |
| Okanagan River, channel between Okanagan Lake and Dog Lake | 9,324 36 | | | | 9,324 36 |
| Skeena River, improvements | 6,962 33 | | | | 6,962 33 |
| Thompson River, improvements | 8,069 92 | | | | 8,069 92 |
| Union Bay wharf | | 3,994 69 | | | 3,994 69 |
| Vancouver harbour | 4,618 79 | | | | 4,618 79 |
| Victoria harbour | 57,374 32 | | | | 57,374 32 |
| William Head, quarantine station | | 4,985 20 | | | 4,985 20 |
| Generally | 607 40 | | | 5,043 11 | 5,650 51 |
| Totals, British Columbia | 186,924 59 | 31,945 40 | 3,961 91 | 20,143 46 | 242,975 36 |
| <i>Yukon Territory.</i> | | | | | |
| Lewis and Yukon rivers, improvements | | 2,186 70 | | | 2,186 70 |
| <i>Harbours and Rivers Generally.</i> | | | | | |
| General expenses of staff, &c. | 2,113 72 | | | 6,553 73 | 8,667 45 |
| Salaries of district engineers, assistants, &c. | | | | 157,030 15 | 157,030 15 |
| Totals, harbours and rivers generally | 2,113 72 | | | 163,583 88 | 165,697 60 |
| DREDGES AND DREDGING PLANT. | | | | | |
| Maritime Provinces | | 47,431 97 | 73,534 36 | | 120,966 33 |
| Ontario and Quebec | | 185,212 69 | 98,052 02 | | 283,264 71 |
| Manitoba | | 40,202 83 | 3,793 55 | | 43,996 38 |
| Saskatchewan and Alberta | | 7,067 43 | | | 7,067 43 |
| British Columbia | | 140,231 01 | 31,287 71 | | 171,518 72 |
| Totals, dredges and dredging plant | | 420,145 93 | 206,667 64 | | 626,813 57 |

1 GEORGE V., A. 1911

PART II.—STATEMENT A.—EXPENDITURE—*Continued.*

| Name of Work. | Construction and Improvements. | Repairs. | Staff and Maintenance. | Total. |
|--|--------------------------------|-----------|------------------------|------------|
| SLIDES AND BOOMS. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Richelieu River (Belœil)..... | | | 120 00 | 120 00 |
| River Saguenay..... | 5,040 50 | 962 71 | 5,265 63 | 11,268 84 |
| River St. Maurice..... | 27,241 56 | | 62,706 09 | 89,947 65 |
| Ottawa District— | | | | |
| Black River..... | | 1,413 11 | | 1,413 11 |
| Coulonge River..... | | 1,552 49 | | 1,552 49 |
| Dumoine River..... | | 673 01 | | 673 01 |
| Gatineau River..... | 22 60 | 926 10 | | 948 10 |
| Madawaska River..... | | 412 35 | | 412 35 |
| Ottawa River..... | | 2,202 05 | 22,330 97 | 24,533 02 |
| Petawawa River..... | | 5,399 72 | | 5,399 72 |
| Rivière du Lièvre..... | | 22 71 | 7 70 | 30 41 |
| Newcastle district..... | | 366 77 | 150 00 | 516 77 |
| Spanish River..... | | 45 26 | | 45 26 |
| North Saskatchewan River, log and storage works..... | 19,967 05 | | | 19,967 05 |
| Collection of slides and boom dues..... | | | 2,736 86 | 2,736 86 |
| Totals, slides and booms..... | 52,271 11 | 13,976 28 | 93,317 25 | 159,564 64 |
| ROADS AND BRIDGES. | | | | |
| Interprovincial bridge, Metapedia..... | 14,537 98 | | | 14,537 98 |
| Des Joachims bridge, Ottawa River..... | | 387 97 | | 387 97 |
| Chapeau bridge..... | | 983 65 | | 983 65 |
| Portage du Fort..... | | 458 35 | | 458 35 |
| Ottawa City bridges and streets, maintained by Government— | | | | |
| Chaudière bridges and approaches..... | | 2,263 37 | | 2,263 37 |
| Sappers, Dufferin bridges and Wellington street..... | | | 6,854 51 | 6,854 51 |
| Lighting all the above..... | | | 1,518 50 | 1,518 50 |
| Belleville and Prince Edward bridges..... | | 75 95 | | 75 95 |
| York bridge (Grand River)..... | | 1,823 32 | | 1,823 32 |
| Northwest provinces and British Columbia— | | | | |
| Bow River and Spray River bridges..... | | 678 26 | | 678 26 |
| Edmonton bridge..... | | 1,152 75 | | 1,152 75 |
| Totals, roads and bridges..... | 14,537 98 | 7,823 62 | 8,373 01 | 30,734 61 |

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PART II.—STATEMENT A.—EXPENDITURE—Continued.

| Name of Work. | Construc- tion and Improve- ments. | Repairs. | Staff and Main- tenance. | Total. |
|--|---|----------|--------------------------------|------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| TELEGRAPH LINES. | | | | |
| <i>Newfoundland.</i> | | | | |
| Cape Ray (subsidy)..... | | | 250 00 | 250 00 |
| <i>Nova Scotia.</i> | | | | |
| Cape Breton lines..... | 3,334 59 | | 21,319 94 | 24,684 53 |
| <i>Prince Edward Island.</i> | | | | |
| Prince Edward Island and Mainland (subsidy)..... | | | 6,946 66 | 6,946 66 |
| <i>New Brunswick.</i> | | | | |
| Bay of Fundy line..... | | | 2,387 98 | 2,387 98 |
| Escuminac line..... | | | 676 23 | 676 23 |
| <i>Quebec (Mainland).</i> | | | | |
| Baie St. Paul St. Placide line..... | | | 56 63 | 56 63 |
| Father Point (subsidy)..... | | | 500 00 | 500 00 |
| North Shore of St. Lawrence, east of Bersimis..... | | | 24,302 51 | 24,302 51 |
| North Shore of St. Lawrence, west of Bersimis..... | 50 50 | | 16,984 59 | 17,035 09 |
| <i>Quebec Islands.</i> | | | | |
| Anticosti line..... | | | 7,038 15 | 7,038 15 |
| Grosse Ile, cable and wire line..... | 1,784 40 | | 3,619 63 | 5,404 03 |
| Isle aux Coudres, subsidy..... | | | 366 00 | 366 00 |
| Isle aux Grues..... | | | 5 00 | 5 00 |
| Isle St. Paul..... | | | 100 00 | 100 00 |
| Magdalen Islands line..... | | | 4,830 48 | 4,830 48 |
| Cable ship <i>Turian</i> | | | 47,674 91 | 47,674 91 |
| Generally, Gulf and Maritime Provinces..... | | | 5,195 88 | 5,195 88 |
| <i>Ontario.</i> | | | | |
| Pelee Island..... | | | 488 30 | 488 30 |
| <i>Saskatchewan and Alberta.</i> | | | | |
| Qu'Appelle-Edmonton-Athabasca..... | 12,144 81 | | 38,179 37 | 50,324 18 |
| <i>British Columbia and Yukon.</i> | | | | |
| Alberni-Cape Beale..... | | | 1,787 30 | 1,787 30 |
| Alberni-Clayoquot..... | | | 4,773 39 | 4,773 39 |
| Ashcroft-Dawson..... | | | 199,988 24 | 199,988 24 |
| Campbell River line..... | 85 00 | | 85 00 | 85 00 |
| Denman and Hornby Islands line..... | | | 10 66 | 10 66 |
| Golden-Windermere..... | | | 2,359 45 | 2,359 45 |
| Kamloops-Okanagan..... | 5,119 63 | | 16,276 68 | 15,390 31 |
| Nanaimo-Comox..... | | | 6,219 91 | 6,219 91 |
| Nanaimo-Gabriola Island..... | | | 1,115 31 | 1,115 31 |
| Prince Rupert-Port Simpson line..... | 3,236 66 | | | 3,236 66 |
| Vancouver Salt Spring-Pender Island line..... | 228 15 | | 1,111 31 | 1,339 46 |
| Victoria-Cape Beale..... | | | 10,567 50 | 10,567 50 |
| Generally, British Columbia..... | | | 1,725 46 | 1,725 46 |
| Telegraph Service, generally..... | | | 1,784 46 | 1,784 46 |
| Total, Telegraphs..... | 25,983 74 | | 422,665 96 | 448,649 70 |

1 GEORGE V., A. 1911

PART II.—STATEMENT A.—EXPENDITURE—Continued.

| Miscellaneous. | Construction and Improvements. | Repairs. | Staff and Maintenance. | Total. |
|--|--------------------------------|----------|------------------------|------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| <i>Surveys and Inspections.</i> | | | | |
| Survey of Richelieu-Yamaska rivers..... | 23,763 80 | | | 23,763 80 |
| " Georgian Bay to Montreal waterway..... | | | 18,266 74 | 18,266 74 |
| " Maritime Provinces..... | | | 17,981 19 | |
| " Quebec..... | | | 29,342 03 | |
| " Ontario..... | | | 16,681 24 | |
| " Manitoba..... | | | 1,815 47 | |
| " Saskatchewan and Alberta..... | | | 4,277 43 | |
| " British Columbia..... | | | 7,542 80 | |
| " Generally..... | | | 3,986 78 | |
| | | | | 81,624 94 |
| Technical and other books of reference..... | | | 288 84 | 288 84 |
| International waterways commission..... | | | 26,344 03 | 26,344 03 |
| International commission, River St. John, N.B..... | | | 10,374 42 | 10,374 42 |
| Branford monument, telephone..... | 5,000 00 | | | 5,000 00 |
| Monument to the memory of the late Thos. D'Arcy McGee..... | 824 88 | | | 824 88 |
| Monument to the memory of the late Hon. George Brown..... | 824 87 | | | 824 87 |
| Gratuity to the widow of the late George E-dale..... | | | 137 25 | 137 25 |
| " widow of the late François Breton..... | | | 250 00 | 250 00 |
| " widow of the late John Irwin..... | | | 66 67 | 66 67 |
| " daughter of the late J. Sinclair..... | | | 125 00 | 125 00 |
| Compensation to F. X. Lefebvre..... | | | 126 38 | 126 38 |
| " Mrs. Ebenezer Buell..... | | | 800 00 | 800 00 |
| " the widow of the late Douglas Lamb..... | | | 1,000 00 | 1,000 00 |
| " the widow of the late Edouard Blanchard..... | | | 500 00 | 500 00 |
| " C. C. Worsfold..... | | | 116 75 | 116 75 |
| " George Turner..... | | | 233 00 | 233 00 |
| " Albert J. Hill..... | | | 77 25 | 77 25 |
| " D. C. Tuck..... | | | 28 50 | 28 50 |
| " C. N. Macdonald..... | | | 351 50 | 351 50 |
| " T. W. P. Patterson..... | | | 500 00 | 500 00 |
| Totals, miscellaneous..... | 30,413 55 | | 141,211 27 | 171,624 82 |

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PART II.—STATEMENT A.—EXPENDITURE—Continued.

| Name of Work. | Dredging. | Construction and Im- provements. | Repairs and Furniture. | Staff and Maintenance. | Total. |
|---|--------------|--|------------------------------|---------------------------|---------------|
| RECAPITULATION. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Totals, Public Buildings | | | | | |
| Nova Scotia | | 79,869 22 | 13,640 40 | 50,745 00 | 144,254 62 |
| Prince Edward Island | | 6,323 55 | 1,451 59 | 9,194 51 | 16,969 65 |
| New Brunswick | | 18,307 24 | 8,266 83 | 45,829 45 | 72,403 52 |
| Quebec | | 392,984 02 | 41,050 64 | 164,509 60 | 598,544 26 |
| Ontario | | 894,791 71 | 290,365 41 | 584,608 85 | 1,769,765 97 |
| Manitoba | | 192,288 16 | 14,587 97 | 55,038 17 | 261,914 30 |
| Saskatchewan and Alberta | | 218,064 40 | 20,158 68 | 61,408 50 | 299,631 58 |
| British Columbia | | 141,958 19 | 14,877 89 | 45,348 25 | 202,184 33 |
| Yukon Territory | | 10,580 13 | | 79,974 76 | 90,554 89 |
| Public Buildings, generally | | | | 42,364 48 | 42,364 48 |
| Totals, Harbours, Rivers, &c. | | | | | |
| Nova Scotia | 326,253 80 | 198,550 35 | 18,609 11 | 13,845 34 | 557,258 60 |
| Prince Edward Island | 23,991 51 | 54,724 22 | 1,308 29 | 479 12 | 80,503 14 |
| New Brunswick | 515,026 63 | 498,650 50 | 8,316 11 | 7,670 49 | 1,029,673 73 |
| Quebec | 254,027 93 | 955,266 86 | 43,936 85 | 51,225 43 | 1,304,057 07 |
| Ontario | 1,707,032 78 | 522,479 02 | 34,161 83 | 36,935 44 | 2,300,609 07 |
| Manitoba | 24,014 31 | 601,952 13 | 20 95 | 2,891 27 | 628,878 66 |
| Saskatchewan and Alberta | 2,131 34 | 85,782 75 | | 3,636 33 | 92,550 42 |
| British Columbia | 186,924 59 | 31,945 40 | 3,961 91 | 20,143 46 | 242,975 36 |
| Yukon Territory | | 2,186 70 | | | 2,186 70 |
| Harbours and Rivers, gen- erally | 2,113 72 | | | 163,583 88 | 165,697 60 |
| Totals, dredges and dredging plant | | 420,145 93 | 206,667 64 | | 626,813 57 |
| " slides and booms | | 52 271 11 | 13,975 28 | 93,317 25 | 159,564 64 |
| " roads and bridges | | 14,537 98 | 7,823 62 | 8,373 01 | 30,734 61 |
| " telegraph lines | | 25,983 74 | | 422,665 96 | 448,649 70 |
| " miscellaneous | | 30,413 55 | | 141,211 27 | 171,624 82 |
| Grand totals of expenditure | 3,042,126 61 | 5,452,056 86 | 743,182 00 | 2,104,999 82 | 11,342,365 29 |

1 GEORGE V., A. 1911

PART II.—STATEMENT B.—SHOWING the Cost of the following Service for each Public Building, &c., (the total for each Province being carried into statement 'A').

| Name of Building. | Rents. | Salaries of and Supplies for Engineers. | Heating. | Lighting. | Water. | Total. |
|---|----------|---|----------|-----------|----------|-----------|
| <i>Nova Scotia.</i> | 8 cts. | 8 cts. | 8 cts. | 8 cts. | \$ cts. | 8 cts. |
| Amherst post office, &c. | | 463 36 | 320 99 | 881 22 | 96 00 | 1,761 57 |
| Annapolis post office, &c. | | 412 11 | 235 01 | 183 75 | 50 00 | 880 87 |
| Antigonish post office, &c. | | 452 61 | 173 82 | 259 83 | 30 00 | 916 26 |
| Arichat post office, &c. | | 151 25 | 186 25 | 17 41 | | 354 91 |
| Buddeck post office, &c. | | 272 42 | 190 00 | 56 65 | | 519 07 |
| Bridgewater post office. | | 425 01 | 61 00 | 228 06 | 63 04 | 777 11 |
| Canso post office. | | 467 74 | 350 00 | 268 00 | | 1,084 74 |
| Dartmouth post office, &c. | | 262 66 | 105 62 | 204 17 | 30 00 | 602 45 |
| Digby post office, &c. | | 438 83 | 208 58 | 621 54 | 64 00 | 1,332 95 |
| Glace Bay post office. | | 411 40 | 111 00 | 4 95 | 24 50 | 551 85 |
| Guy'sboro' post office, &c. | | 54 99 | 162 50 | 163 80 | | 381 29 |
| Halifax Asst. Receiver General's Office | 1,210 00 | | 70 55 | 126 48 | | 1,407 03 |
| " Appraiser's Office, (Exam. W. H.) | 750 00 | 776 50 | 258 84 | 83 47 | | 1,868 81 |
| " custom house (new). | 28 20 | 3,337 23 | 761 53 | 4,810 97 | | 8,937 93 |
| " Dominion building (post office). | | 2,190 25 | 226 70 | 88 80 | | 2,505 75 |
| " drill shed. | | 1,200 00 | | | | 1,200 00 |
| " immigrant shed. | | 660 00 | 905 73 | 1,730 13 | | 3,295 86 |
| " immigration detention building (Trachoma). | | | 360 97 | 247 35 | | 608 32 |
| Inverness post office, &c. | | 422 88 | 235 77 | 445 65 | 45 00 | 1,169 30 |
| Kentville post office, &c. | | 423 14 | 232 75 | 292 00 | 50 00 | 997 89 |
| Liverpool post office, &c. | | 417 83 | 139 90 | 249 79 | 18 00 | 825 52 |
| Lunenburg post office, &c. | | 418 25 | 208 75 | 329 23 | 50 00 | 1,015 23 |
| New Glasgow post office, &c. | | 454 23 | 267 71 | 864 04 | 100 00 | 1,685 98 |
| North Sydney post office, &c. | | 399 96 | 253 00 | 1,169 93 | 40 00 | 1,862 89 |
| " engineer's office. | 55 00 | | | | | 55 00 |
| Pictou custom house | | | 225 12 | 71 63 | 100 00 | 396 75 |
| " post office. | | 623 43 | 216 19 | 712 60 | 100 00 | 1,652 22 |
| Shelburne post office. | | 33 33 | 142 22 | | | 175 55 |
| Springhill post office, &c. | | 466 08 | 383 90 | 574 51 | 30 00 | 1,454 49 |
| Sydney post office. | | 697 41 | 255 88 | 2,065 37 | 58 00 | 3,076 66 |
| Sydney Mines post office, &c. | | 412 49 | 193 00 | 942 08 | 30 00 | 1,577 57 |
| Truro post office, &c. | | 435 28 | 296 63 | 580 09 | 30 00 | 1,332 00 |
| Westville post office, &c. | | 305 54 | 114 54 | 250 95 | 22 50 | 693 53 |
| Windsor post office, &c. | | 399 96 | 281 92 | 313 70 | 100 00 | 1,095 58 |
| Yarmouth post office, &c. | | 455 56 | 336 00 | 1,498 81 | 72 00 | 2,362 37 |
| Total for Nova Scotia. | 2,043 20 | 18,341 73 | 8,491 37 | 20,336 96 | 1,212 04 | 50,425 30 |
| <i>Prince Edward Island.</i> | | | | | | |
| Charlottetown Dominion building. | | 2,597 51 | 975 34 | 2,258 01 | 225 00 | 6,055 86 |
| " experimental farm. | | | 15 22 | 14 45 | | 29 67 |
| " engineer's office. | 294 00 | | | | | 294 00 |
| Georgetown post office, &c. | 104 00 | 117 17 | 103 40 | 19 86 | | 344 43 |
| Montague post office, &c. | | 177 05 | 195 49 | 89 85 | | 452 39 |
| Souris post office, &c. | | 364 35 | 324 18 | 100 51 | | 789 04 |
| Summerside post office, &c. | | 426 94 | 427 59 | 311 50 | 54 00 | 1,220 12 |
| Total for Prince Edward Island. | 398 00 | 3,683 02 | 2,031 22 | 2,803 27 | 279 00 | 9,194 51 |
| <i>New Brunswick.</i> | | | | | | |
| Bathurst post office, &c. | | 456 96 | 306 80 | 1,702 33 | | 2,466 09 |
| Campbellton post office, &c. | | 420 68 | 238 02 | 299 30 | 43 00 | 1,001 00 |
| Carleton, St. John West, post office, &c. | | 399 96 | 145 21 | 117 92 | 10 50 | 673 59 |
| Chatham post office, &c. | | 321 35 | 298 45 | 559 09 | 25 00 | 1,203 89 |
| Dalhousie post office, &c. | | 407 52 | 236 00 | 41 52 | 32 50 | 717 54 |
| Fredericton post office, &c. | | 423 96 | 256 75 | 1,333 97 | 55 50 | 2,070 18 |
| Grand Falls post office. | 120 00 | | | | | 120 00 |
| Marysville post office, &c. | | 150 00 | 161 24 | 53 06 | | 364 30 |
| Moncton post office, &c. | | 476 30 | 311 50 | 781 69 | 167 50 | 1,736 99 |

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PART II.—STATEMENT B.—EXPENDITURE—Continued.

| Name of Building. | Rents. | Salaries of and Supplies for Engineers | Heating. | Lighting. | Water. | Total. |
|--------------------------------------|----------|--|----------|-----------|----------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| <i>New Brunswick—Concluded.</i> | | | | | | |
| Newcastle post office, &c. | | 497 86 | 320 13 | 454 35 | 35 00 | 1,217 34 |
| Richibucto post office, &c. | | 419 71 | 302 08 | 411 37 | | 1,133 16 |
| St. John custom house. | 63 25 | 2,579 56 | 1,887 95 | 732 89 | 2,439 94 | 7,703 59 |
| " cattle quarantine. | | 337 00 | | | 448 95 | 785 95 |
| " Canadian Bk of C., engineer's | 307 50 | | | | | 307 50 |
| " detention hospital | 2,298 04 | 888 75 | 234 53 | 104 12 | 181 50 | 3,706 94 |
| " immigrant building. | 1,052 66 | 1,219 00 | 1,079 06 | 330 27 | 181 34 | 3,862 33 |
| " post office | 10 00 | 2,689 15 | 763 30 | 3,093 94 | 2,178 64 | 8,735 03 |
| " savings bank. | | 0 15 | 286 22 | 93 24 | 37 83 | 417 44 |
| " Partridge Island | | | | | 765 49 | 765 49 |
| Tracadie Lazaretto. | | 720 00 | 1,640 66 | | | 2,360 66 |
| St. Stephen post office, &c. | | 629 02 | 170 75 | 765 60 | 80 00 | 1,645 37 |
| Sussex post office, &c. | | 328 59 | 381 25 | 143 93 | 50 00 | 903 77 |
| Woodstock post office, &c. | | 510 18 | 311 32 | 692 80 | 17 00 | 1,531 39 |
| " drill hall. | | 400 00 | | | | 400 00 |
| Total for New Brunswick. | 3,851 45 | 14,185 70 | 9,331 22 | 11,711 39 | 6,749 69 | 45,829 45 |
| <i>Quebec.</i> | | | | | | |
| Acton Vale post office. | | 418 76 | 23 75 | 400 00 | 24 00 | 866 51 |
| Aylmer post office. | | 118 95 | 279 32 | 302 04 | 41 25 | 741 56 |
| Berthierville post office. | | 6 67 | 72 00 | 115 55 | 30 25 | 224 47 |
| Black Lake post office. | 56 00 | | | | | 56 00 |
| Buckingham post office. | | 130 65 | 195 11 | 192 45 | 37 29 | 555 41 |
| Chicoutimi post office, &c. | | 551 60 | 344 88 | 506 50 | 375 00 | 1,777 98 |
| " telegraph supt.'s office. | 90 00 | | | | | 90 00 |
| Coaticook post office, &c. | | 417 36 | 258 75 | 329 28 | 50 00 | 1,055 39 |
| Cookshire post office. | | 150 52 | 149 37 | 19 13 | | 319 02 |
| Drummondville post office. | | 425 93 | 142 98 | 140 20 | 22 00 | 731 11 |
| Dundee custom house. | | 33 85 | 12 50 | | | 46 35 |
| Father Point engineer's office. | 30 00 | | | | | 30 00 |
| Fraserville post office, &c. | | 467 25 | 566 80 | 196 36 | 20 00 | 1,430 41 |
| Granby post office, &c. | | 307 53 | 220 40 | 124 84 | 150 00 | 802 77 |
| Hochelega post office. | | 203 22 | 196 95 | 214 80 | 68 87 | 683 84 |
| Iberville post office, &c. | | 480 00 | 86 40 | 132 53 | 24 00 | 722 93 |
| Hull post office. | | 154 25 | 249 45 | 469 15 | 244 65 | 1,117 50 |
| Isle Verte engineer's office. | 49 00 | | | | | 49 00 |
| Joliette post office. | | 416 77 | 255 55 | 138 00 | 108 00 | 918 32 |
| Knowlton post office. | | 138 42 | 244 21 | 123 50 | 12 00 | 518 13 |
| Lachine post office. | | 120 16 | 168 20 | 240 05 | 28 68 | 557 09 |
| Lachute post office. | | 399 43 | 109 08 | 410 63 | | 919 14 |
| Laprairie post office. | | 157 08 | 184 24 | 29 12 | 45 00 | 415 44 |
| L'Assomption post office. | | 265 00 | 205 97 | 195 62 | 50 00 | 716 59 |
| Lévis post office, &c. | | 482 83 | 620 94 | 537 49 | 292 50 | 1,933 76 |
| Marierville post office. | | 6 00 | | | | 6 00 |
| Longueuil post office. | | 341 10 | 102 25 | 151 81 | 41 14 | 636 30 |
| Magog post office. | | 315 12 | 178 71 | 100 00 | 26 17 | 620 00 |
| Montmagny post office. | | 425 12 | 181 50 | 305 34 | 50 00 | 961 96 |
| " engineer's office. | 62 50 | | | | | 62 50 |
| Montreal civil service exam. office. | | | | | | |
| " Board of Trade R.R. Com'rs. | 230 00 | | | 8 33 | 13 00 | 251 33 |
| " custom house. | 35 00 | 5,768 64 | 1,264 19 | 1,138 01 | 346 35 | 8,532 19 |
| " Commissioner at | | | | 79 50 | | 79 50 |
| " Dominion public buildings. | 17 50 | 161 11 | | 110 00 | | 288 61 |
| " customs, Colborne st. | | | | 11 90 | 3 88 | 15 78 |
| " drill hall. | | 914 70 | | | | 914 70 |
| " engineer's office, Merchants' | | | | | | |
| " Bank Building. | 1,136 50 | | | | 35 89 | 1,172 39 |
| " clerk of works' office. | 196 00 | | | | 11 06 | 207 06 |
| " examining warehouse. | 55 00 | 13,114 16 | 1,245 96 | 3,979 39 | 1,223 75 | 19,618 26 |

1 GEORGE V., A. 1911

PART II.—STATEMENT B.—EXPENDITURE—Continued.

| Name of Building. | Rents. | Salaries of and Supplies for Engineers. | Heating. | Lighting. | Water. | Total. |
|--|-----------|---|-----------|-----------|----------|------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| <i>Quebec—Concluded.</i> | | | | | | |
| Montreal express customs, D'Youville st. | | 1,547 45 | 694 55 | 657 47 | 36 92 | 2,936 39 |
| " immigration office. | 1,538 25 | 5 75 | 372 12 | 207 79 | 159 32 | 2,283 23 |
| " inland revenue office. | | 871 36 | 300 62 | 200 67 | 99 97 | 1,472 62 |
| " military stores. | 1,000 00 | | | | | 1,000 00 |
| " post office (Main). | 137 06 | 21,082 10 | 4,901 55 | 18,867 98 | 1,304 30 | 46,292 96 |
| " Station A (Wellington st.). | | 32 40 | 1 15 | 17 40 | | 50 95 |
| " Station B (St. Catherine st.). | | 1,336 58 | 416 29 | 1,056 26 | 262 93 | 3,072 06 |
| " other rented branches, sort- ing rooms, &c. | 4,809 66 | 536 97 | 178 38 | 1,226 31 | 130 21 | 6,881 53 |
| Nicolet post office. | | 523 36 | 199 79 | 33 56 | 61 00 | 817 71 |
| Nominique immigrant building. | | 300 00 | 162 00 | 19 23 | | 481 22 |
| Plessisville post office. | | 10 00 | 187 50 | | | 197 50 |
| Peribonka immigrant building. | | 300 40 | 82 50 | 3 48 | | 386 38 |
| Pierreville post office. | | 16 00 | 108 75 | 9 60 | | 134 35 |
| Quebec citadel buildings. | 34 00 | 547 50 | 103 58 | 153 45 | | 1,338 53 |
| " cutter office. | | 540 00 | 301 13 | 1 25 | | 842 38 |
| " custom house. | | 630 75 | 762 30 | 91 13 | | 1,484 18 |
| " engineer's office. | 181 50 | 55 50 | | | | 237 00 |
| " examining warehouse. | | 1,640 12 | 544 49 | 304 09 | 450 00 | 2,938 70 |
| " immigration building. | 227 50 | | 407 34 | 2,159 77 | | 2,794 61 |
| " observatory. | | | | 97 20 | 50 00 | 147 20 |
| " post office. | 91 50 | 4,303 01 | 726 72 | 1,529 67 | 750 00 | 7,400 90 |
| " " St. Roch's. | | | 47 63 | 50 87 | | 98 50 |
| " Queen's wharf building (Mar- ine, signal service, cutlers, gas inspection, weights and measures). | 503 33 | | 505 71 | 16 86 | 750 00 | 1,775 90 |
| " post office St. Sauveur. | 400 00 | 132 50 | | | 24 50 | 557 00 |
| " trachoma hospital. | | | 340 45 | 341 84 | | 682 29 |
| Richelieu River, engineer's office. | | | | 7 50 | | 7 50 |
| Richmond post office, &c. | | 459 63 | 414 10 | 423 48 | 25 00 | 1,322 21 |
| Rimouski post office, &c. | | 158 00 | 393 43 | 243 14 | 75 00 | 869 57 |
| " engineer's office. | 15 00 | | | | | 15 00 |
| Roberval immigration shed. | | 300 00 | 552 10 | 219 22 | 26 00 | 1,097 32 |
| Sherbrooke post office, &c. | | 681 70 | 512 28 | 552 98 | 50 00 | 1,796 96 |
| Sorel post office, &c. | | 571 65 | 424 28 | 1,003 22 | 250 00 | 2,249 15 |
| Ste. Anne de Bellevue post office. | 100 00 | | | | | 100 00 |
| St. Eustache post office, &c. | | | | 70 08 | | 70 08 |
| St. Gabriel de Brandon post office. | 200 00 | | 45 00 | 27 00 | | 272 00 |
| St. Henri Post Office, &c. | | 14 50 | 116 11 | 61 40 | 30 80 | 222 81 |
| St. Hyacinthe post office, &c. | | 633 14 | 165 29 | 531 92 | 225 00 | 1,555 35 |
| " inland revenue office. | | 412 71 | 169 04 | 49 51 | 150 00 | 781 26 |
| " drill hall. | | 400 00 | | | | 400 00 |
| St. Johns post office, &c. | | 241 62 | 250 65 | 162 35 | 50 00 | 704 62 |
| St. Jerome post office, &c. | | 407 71 | 302 90 | 208 13 | 54 00 | 972 74 |
| Old post office St. John's custom house. | | 369 58 | 120 47 | 155 65 | 75 00 | 720 70 |
| St. Louis du Mile End post office. | | 637 96 | 226 29 | 267 36 | 42 66 | 1,174 27 |
| Terrebonne post office, &c. | | 327 51 | 143 76 | 188 24 | 30 00 | 689 51 |
| Thetford Mines post office, &c. | | 162 49 | 213 27 | 283 46 | 13 00 | 672 22 |
| Three Rivers drill hall. | | 400 00 | | 50 00 | | 450 00 |
| " clerk of works office. | 50 00 | | | | | 50 00 |
| " custom house. | | 65 30 | | | | 65 30 |
| " engineer's office. | 146 00 | | | | | 146 00 |
| " post office. | | 754 05 | 83 00 | 732 75 | 55 64 | 1,625 44 |
| " inland revenue. | 329 00 | | | | | 329 00 |
| Valleyfield post office, &c. | | 436 99 | 365 27 | 135 58 | 90 00 | 1,027 84 |
| Victoriaville post office, &c. | 1 00 | 129 50 | 700 09 | 256 37 | 50 00 | 1,136 96 |
| West Farnham post office. | | 310 10 | 105 70 | 131 97 | 20 00 | 567 77 |
| Total for Quebec. | 11,721 30 | 69,178 07 | 24,707 04 | 43,508 70 | 8,945 89 | 158,061 00 |

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PART II.—STATEMENT B.—EXPENDITURE—Continued.

| Name of Building. | Rents. | Salaries of and Supplies for Engineers. | Heating. | Lighting. | Water. | Total |
|-----------------------------------|----------|---|----------|-----------|----------|----------|
| <i>Ontario.</i> | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Alexandria post office, &c. | | 499 92 | 225 11 | 202 78 | 10 50 | 938 31 |
| Almoute post office, &c. | | 424 87 | 253 16 | 125 87 | 82 50 | 886 40 |
| Amherstburg post office, &c. | | 418 86 | 200 50 | 210 55 | 35 00 | 864 91 |
| Arnprior post office, &c. | | 492 94 | 363 20 | 805 06 | 32 41 | 1,693 61 |
| Barrie post office, &c. | | 422 15 | 215 25 | 426 56 | 50 00 | 1,113 96 |
| Belleville post office, &c. | | 686 62 | 646 20 | 2,241 78 | 83 25 | 3,657 85 |
| Berlin post office, &c. | | 449 96 | 385 36 | 515 73 | 27 87 | 1,378 92 |
| Bowmanville post office, &c. | | 399 96 | 182 25 | 118 45 | 10 00 | 710 66 |
| Brampton post office, &c. | | 432 36 | 222 46 | 302 95 | 34 20 | 991 97 |
| Brantford post office, &c. | | 627 95 | 474 20 | 507 00 | 38 00 | 1,647 15 |
| Bridgeburg post office, &c. | | 321 48 | 186 00 | 83 43 | 20 00 | 610 91 |
| Brockville post office, &c. | | 587 17 | 425 22 | 634 10 | 170 00 | 1,816 49 |
| Carleton Place post office, &c. | | 312 25 | 163 35 | 189 08 | | 664 68 |
| Cayuga post office, &c. | | 65 92 | 42 43 | 151 62 | 2 25 | 262 22 |
| Chatham drill hall. | | 400 00 | | | | 400 00 |
| " post office, &c. | | 564 57 | 241 55 | 161 33 | 14 50 | 981 95 |
| Clinton post office, &c. | | 210 77 | 234 60 | 335 63 | 2 50 | 783 50 |
| Cobourg post office, &c. | | 426 88 | 287 25 | 749 50 | 56 88 | 1,520 51 |
| Cornwall post office, &c. | | 493 71 | 278 50 | 1,072 65 | 112 50 | 1,957 36 |
| Deseronto post office, &c. | | 450 51 | 276 00 | 675 14 | 39 00 | 1,440 65 |
| Dundas post office. | 500 00 | 49 92 | 133 00 | 80 00 | | 762 92 |
| Fort William post office | | 477 75 | 474 25 | 402 05 | 90 00 | 1,444 05 |
| " engineer's office | 480 00 | | | | | 480 00 |
| Galt post office, &c. | | 425 04 | 221 90 | 86 00 | 52 71 | 785 65 |
| Gananoque custom house | | 159 60 | 159 60 | 105 00 | 39 62 | 304 22 |
| " post office. | | 18 69 | 109 95 | 141 00 | 29 16 | 298 80 |
| Glencoe post office. | | | 162 65 | | | 162 65 |
| Goderich post office, &c. | | 414 21 | 360 09 | 273 14 | 60 00 | 1,067 44 |
| Geelph post office, &c. | | 593 57 | 488 84 | 1,254 70 | 66 67 | 2,403 78 |
| Hamilton customs exam. warehouse. | | 630 40 | | 174 14 | 44 70 | 849 24 |
| " inland revenue office | | | | 68 77 | 31 45 | 100 22 |
| " drill shed. | | 746 25 | | | | 746 25 |
| " Station B. | 980 00 | | | 30 83 | 10 50 | 1,021 33 |
| " post office. | | 2,686 45 | 1,095 97 | 2,315 79 | 1,018 20 | 7,116 41 |
| Hawkesbury post office, &c. | | 436 28 | 142 40 | 252 64 | 18 00 | 843 32 |
| Ingersoll post office, &c. | | 463 86 | 297 31 | 586 74 | 32 15 | 1,380 06 |
| Kenora post office, &c. | | 407 76 | 774 92 | 601 43 | 70 76 | 1,854 87 |
| Kincardine post office. | | | 218 38 | | | 218 38 |
| Kingston custom house. | 440 50 | 223 50 | 357 80 | 137 15 | 59 15 | 1,218 10 |
| " drill hall. | | 600 00 | | | | 600 00 |
| " inland revenue office. | 1,701 98 | 531 97 | 388 10 | 65 20 | 120 47 | 2,807 72 |
| " Military College. | | 3,660 00 | | | | 3,660 00 |
| " ordnance stores. | 750 00 | | | | | 750 00 |
| " post office | | 652 32 | 441 40 | 983 20 | 59 41 | 2,136 33 |
| Lindsay post office, &c. | | 421 93 | 206 36 | 130 35 | 37 50 | 856 14 |
| London custom house. | | 1,127 72 | 751 46 | 805 72 | 156 60 | 2,841 50 |
| " drill hall. | | 720 00 | | | | 720 00 |
| " engineer's office | 457 00 | | | | | 457 00 |
| " post office. | | 1,449 96 | 1,091 70 | 2,049 48 | 70 00 | 4,661 14 |
| L'Original post office. | 127 50 | | | | | 127 50 |
| Markham post office. | | 385 21 | 82 51 | | | 467 72 |
| North Bay post office, &c. | | 769 30 | 394 92 | 1,004 90 | 42 00 | 2,211 12 |
| Napanee post office, &c. | | 412 61 | 300 43 | 457 50 | 73 38 | 1,243 92 |
| Niagara Falls post office, &c. | | 428 61 | 260 93 | 487 50 | 35 25 | 1,211 69 |
| Orangeville post office, &c. | | 401 43 | 199 79 | 251 75 | 20 00 | 872 97 |
| Orillia post office, &c. | | 354 32 | 250 75 | 84 24 | 48 75 | 738 06 |
| Oshawa post office, &c. | | 410 29 | 218 92 | 340 05 | 22 42 | 991 68 |
| Owan Sound post office, &c. | | 316 49 | 318 86 | 20 75 | 50 00 | 706 10 |
| Ottawa archives building. | | 1,320 60 | 719 59 | 396 00 | | 2,436 59 |
| " astronomical observatory | | 1,443 65 | 942 77 | 433 50 | | 2,819 92 |
| " bacteriological laboratory. | | | 156 50 | 396 00 | | 552 50 |
| " experimental farm. | | | 1,939 14 | 187 39 | | 2,126 53 |

1 GEORGE V., A. 1911

PART II.—STATEMENT B.—EXPENDITURE—Continued.

| Name of Building. | Rents. | Salaries of and Supplies for Engineers. | Heating. | Lighting. | Water. | Total. |
|---|------------|---|-----------|-----------|---------|------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| <i>Ontario—Continued.</i> | | | | | | |
| Ottawa fuel testing buildings (Department Mines)..... | | 330 00 | 126 00 | | | 456 00 |
| " Geological Museum, Sussex st. | | 660 00 | 1,175 77 | 1,113 98 | | 2,949 75 |
| " Major's Hill Park green house | | 330 00 | 420 00 | 16 50 | | 766 50 |
| " National Art Gallery and Fisheries Museum..... | | | 210 00 | 223 50 | | 433 50 |
| " Parliamentary and Departmental Buildings..... | | 48,236 47 | 34,152 89 | 25,085 03 | | 107,474 39 |
| " post office..... | | 2,613 39 | 1,633 41 | 1,133 00 | | 5,279 80 |
| " printing bureau..... | | 7,492 26 | 9,953 42 | 3,008 64 | | 20,454 32 |
| " royal mint..... | | 660 00 | 2,392 61 | 204 00 | | 3,256 61 |
| " supreme court..... | | 1,050 00 | 1,049 67 | 524 00 | | 2,623 67 |
| " workshops (D. P. W.), &c..... | | 330 00 | 1,270 00 | 387 00 | | 1,987 00 |
| " sundry rented buildings..... | 138,845 63 | 7,710 00 | 13,324 79 | 10,930 90 | | 170,811 32 |
| " militia stores building..... | | | | 25 45 | | 25 45 |
| " Victoria memorial museum (portion used as temporary militia store)..... | | | 3,220 00 | | | 3,220 00 |
| Renfrew post office..... | | 176 29 | 321 98 | 87 85 | 6 25 | 592 37 |
| Park Hill post office..... | | | 140 00 | | | 140 00 |
| Paris post office, &c..... | | 412 71 | 159 75 | 111 83 | 73 00 | 757 29 |
| Pembroke post office, &c..... | | 418 76 | 260 81 | 248 20 | 36 00 | 963 77 |
| Peterboro' custom house..... | | 300 00 | 251 48 | 196 80 | 50 00 | 798 28 |
| " post office..... | | 483 76 | 299 29 | 294 80 | 75 00 | 1,152 85 |
| Petrolia post office, &c..... | | 415 85 | 213 69 | 334 36 | 55 70 | 1,019 60 |
| Pictou post office, &c..... | | 436 24 | 236 40 | 237 37 | 27 00 | 937 01 |
| Port Arthur post office, &c..... | | 412 36 | 424 50 | 576 48 | 115 64 | 1,528 98 |
| " immigrant building..... | | | 93 45 | | 10 00 | 103 45 |
| " engineer's office..... | 349 00 | | | 19 00 | | 368 00 |
| Port Colborne post office..... | | 384 27 | 15 63 | 213 42 | 25 00 | 638 32 |
| Port Burwell engineer's office..... | 60 00 | | | | | 60 00 |
| Port Hope post office, &c..... | | 403 16 | 293 30 | 562 40 | 13 06 | 1,271 92 |
| Prescott custom house..... | | | 124 00 | 58 32 | 75 00 | 257 32 |
| " post office..... | | 470 76 | 192 00 | 220 86 | 75 00 | 958 62 |
| Sandwich post office, &c..... | | 317 73 | 149 34 | 75 04 | 17 98 | 560 09 |
| Sarnia post office, &c..... | | 549 92 | 313 33 | 503 75 | 44 00 | 1,411 00 |
| Sault Ste. Marie immigrant building..... | 10 00 | | 18 75 | 0 80 | | 29 55 |
| " post office, &c..... | | 644 51 | 1,331 62 | 520 50 | 45 34 | 2,541 97 |
| Simcoe post office..... | | | 39 95 | 15 35 | 10 00 | 65 30 |
| Smith's Falls post office, &c..... | | 428 01 | 202 25 | 204 61 | 106 25 | 941 12 |
| Stratford armoury..... | | 400 00 | | | | 400 00 |
| " post office, &c..... | | 679 60 | 389 99 | 492 56 | 112 50 | 1,674 65 |
| Strathroy post office, &c..... | | 443 21 | 237 58 | 199 45 | 18 99 | 899 23 |
| " armoury..... | | 65 00 | | | | 65 00 |
| St. Catharines drill hall..... | | 400 00 | | | | 400 00 |
| " post office, &c..... | 19 70 | 417 31 | 366 38 | 585 75 | 57 47 | 1,446 61 |
| St. Mary's post office, &c..... | | 435 88 | 233 60 | 458 42 | 30 47 | 1,158 37 |
| St. Thomas post office, &c..... | | 408 71 | 266 00 | 477 05 | 10 02 | 1,161 78 |
| Toronto Assistant-Receiver General's, and inland revenue offices | | 964 00 | 272 87 | 277 11 | 45 15 | 1,559 13 |
| " custom house..... | | 4,007 46 | 954 25 | 742 14 | 151 38 | 5,855 23 |
| " drill shed..... | | 2,290 40 | | | | 2,290 40 |
| " engineer's office..... | 989 00 | | | 85 36 | | 1,074 36 |
| " examining warehouse..... | 30 00 | 5,116 67 | 1,591 60 | 575 95 | 67 70 | 7,381 92 |
| " immigrant sheds..... | 1,000 00 | | | | | 1,000 00 |
| " steamboat inspector's office | 640 00 | | | | | 640 00 |
| " post office..... | | 9,018 32 | 1,596 36 | 5,633 37 | 899 25 | 17,147 30 |
| " " station A..... | 2,400 00 | 2,006 98 | | 2,761 37 | | 7,168 35 |
| " " " B..... | 1,600 00 | 167 05 | | 273 01 | 23 76 | 1,463 82 |
| " " " C..... | | 555 03 | 190 03 | 449 85 | 15 30 | 1,210 21 |
| " " " D..... | | 518 89 | 341 79 | 419 15 | 7 80 | 1,287 63 |
| " " " E..... | 530 00 | | | 14 32 | | 544 32 |
| " " " F..... | 22 24 | 616 78 | 393 73 | 414 40 | 30 27 | 1,477 42 |
| " " " G..... | 945 00 | 222 50 | 0 75 | 207 40 | | 1,375 65 |

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PART II.—STATEMENT B.—EXPENDITURE—Continued.

| Name of Building. | Rents. | Salaries of and Supplies for Engineers. | Heating. | Lighting. | Water. | Total. |
|--|------------|---|------------|-----------|----------|------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| <i>Ontario—Concluded.</i> | | | | | | |
| Trenton post office..... | | 451 46 | 279 00 | 655 70 | 81 25 | 1,467 41 |
| Walkerville post office..... | | | | | 6 00 | 6 00 |
| Walkerton post office, &c. | | 407 71 | 257 94 | 345 13 | 31 00 | 1,041 78 |
| Welland post office..... | | | 216 42 | | | 216 42 |
| Whitby post office, &c. | | | 198 00 | | | 198 00 |
| Windsor drill hall..... | | 400 00 | | | | 400 00 |
| " post office, &c. | | 943 21 | 428 52 | 1,449 89 | 103 58 | 2,925 20 |
| Wingham post office..... | | 199 92 | 240 98 | 238 86 | 23 15 | 702 91 |
| Woodstock armoury..... | | 431 00 | | | | 431 00 |
| " post office, &c. | | 506 45 | 337 35 | 509 84 | 35 20 | 1,388 84 |
| Totals for Ontario..... | 152,277 55 | 139,401 73 | 101,627 00 | 88,511 94 | 5,790 67 | 487,608 89 |
| <i>Manitoba.</i> | | | | | | |
| Brandon experimental farm..... | | | 275 14 | 60 79 | | 335 93 |
| " immigration building..... | | | 476 49 | 106 60 | 53 12 | 636 21 |
| " post office, &c. | | 838 24 | | 1,013 77 | 58 42 | 2,856 84 |
| Dauphin immigration station..... | | | 70 00 | | | 70 00 |
| " lands office, Indian Department..... | 390 00 | | 70 00 | | | 460 00 |
| " post office, &c. | | 174 19 | 446 58 | 202 90 | | 823 67 |
| East Selkirk post office..... | | 676 15 | 348 65 | 153 66 | 5 60 | 1,184 06 |
| Selkirk engineer's office..... | 31 32 | | | | | 31 32 |
| Neepona post office, &c. | | 275 00 | 229 66 | 104 40 | | 609 06 |
| Portage la Prairie post office, &c. | | 592 05 | 530 83 | 399 51 | 18 70 | 1,541 12 |
| St. Boniface post office..... | | 675 65 | 469 67 | 61 85 | 35 95 | 1,243 12 |
| Virden immigration building..... | 250 00 | | 30 00 | | | 280 00 |
| Winnipeg custom house..... | | 1,167 60 | 804 51 | 176 20 | 46 84 | 2,195 15 |
| " express parcels office..... | 1,200 00 | | | 27 70 | | 1,227 70 |
| " Dominion public buildings..... | | 84 00 | 4 00 | 2 95 | | 90 95 |
| " engineer's office..... | 780 80 | 6 75 | | | | 787 55 |
| " examining warehouse..... | | 17 10 | 383 48 | 148 70 | 15 59 | 564 87 |
| " immigration building..... | | | 3,880 75 | 1,131 55 | 428 26 | 5,440 56 |
| " weights and measures office..... | 900 00 | | | | | 900 00 |
| " post office (old)..... | | 3,213 79 | 2,788 57 | 364 05 | 275 36 | 6,641 77 |
| " post office (new)..... | 31 00 | 6,570 17 | 3,352 43 | 3,262 63 | 835 20 | 14,051 43 |
| " post office, sorting room, C. P. Ry. station..... | 31 00 | 3,717 00 | 1,456 90 | 3,287 90 | | 8,492 80 |
| " postal station A..... | 2,050 00 | 43 75 | | | | 2,093 75 |
| " " B..... | | 734 30 | 237 82 | 94 10 | 11 69 | 1,077 91 |
| " Railway Commissioners' office..... | 420 00 | 58 65 | | 12 00 | | 490 65 |
| Total for Manitoba..... | 6,084 12 | 18,844 39 | 16,801 89 | 10,611 29 | 1,784 73 | 54,126 42 |
| <i>Saskatchewan and Alberta.</i> | | | | | | |
| Battleford Dominion lands office..... | 625 00 | | 112 00 | | | 737 00 |
| " immigration building..... | 90 00 | | 252 00 | | | 342 00 |
| Biggar immigration building..... | | | 40 87 | | | 40 87 |
| Calgary custom house..... | 5,118 10 | | | 77 49 | | 5,195 59 |
| " engineer's office..... | 754 60 | | | 7 32 | | 761 92 |
| " immigration building..... | 1 00 | | 194 76 | 30 38 | 40 00 | 266 14 |
| " inland revenue—Castello Bldg. post office, &c. | 110 32 | 2,911 55 | 1,921 24 | 4,677 31 | 336 60 | 9,846 10 |
| Davidson immigrant building..... | | | 1 85 | | | 1 85 |
| Lloydminster immigrant hall..... | | | 30 00 | | | 30 00 |
| Edmonton Dominion lands and registry office..... | | 424 05 | 206 86 | 314 59 | 4 00 | 949 50 |
| " immigrant shed..... | | | 340 50 | 71 75 | 209 79 | 623 04 |
| " post office, &c. | 2,700 00 | 1,704 43 | 858 47 | 1,179 30 | 92 16 | 6,534 36 |
| " Credit Foncier Bldg. Estevan Dominion lands office..... | 426 00 | | | 9 25 | | 435 25 |
| | 440 00 | | | | | 440 00 |

1 GEORGE V., A. 1911

PART II.—STATEMENT B.—EXPENDITURE—Continued.

| Name of Building. | Rents. | Salaries of and Supplies for Engineers | Heating. | Lighting. | Water. | Total. |
|---|-----------|--|-----------|-----------|----------|-----------|
| <i>Saskatchewan and Alberta—Con.</i> | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Humboldt Dominion lands office..... | 360 00 | | 172 95 | | | 532 95 |
| Gull Lake immigration..... | | | 17 08 | | | 17 08 |
| Indian Head experimental farm..... | | | 402 27 | 136 87 | | 539 14 |
| " forestry station..... | 325 00 | | 766 73 | 5 41 | 59 17 | 1,156 31 |
| Irvine immigration..... | 140 00 | | 137 50 | | | 140 00 |
| Lacombe experimental farm..... | | | 179 78 | 48 84 | | 219 62 |
| Lethbridge immigration building..... | | | 436 25 | 81 74 | 100 00 | 617 99 |
| " experimental farm..... | | | 137 50 | | | 137 50 |
| " post office..... | | 507 05 | 120 50 | 87 62 | 52 50 | 767 67 |
| Medicine Hat armoury..... | | 56 00 | | | | 56 00 |
| " post office..... | | 746 15 | 117 72 | 108 31 | 20 48 | 992 66 |
| Maple Creek post office..... | | 133 28 | 265 50 | | | 398 78 |
| McLeod custom house..... | | | 76 46 | 109 34 | 28 46 | 214 26 |
| North Battleford post office..... | 60 00 | | 98 95 | | | 158 95 |
| Moosejaw immigration building..... | | | 197 20 | 23 00 | | 220 20 |
| North Battleford immigrant building..... | 180 00 | | | | | 180 00 |
| Moosejaw lands office..... | 2,220 00 | | | | | 2,220 00 |
| Moosejaw inland revenue office..... | 30 00 | | | | | 30 00 |
| Prince Albert immigrant shed..... | 358 00 | | 200 00 | 24 33 | | 582 33 |
| " lands and registry office..... | | 21 65 | | 10 50 | | 32 15 |
| " post office..... | | 1,184 26 | 3,230 33 | 1,019 96 | 71 38 | 5,505 93 |
| Red Deer Dominion lands office, public building..... | | 605 00 | 327 77 | | 26 00 | 958 77 |
| Mortlach immigration building..... | 240 60 | | 3 95 | | | 243 95 |
| Moosejaw public building..... | | 590 33 | 916 70 | 1,352 63 | 68 95 | 2,928 61 |
| Philpotts immigrant building..... | | | 34 00 | | | 34 00 |
| Regina clerk of works office..... | 92 50 | | 92 50 | | | 92 50 |
| " engineer's office..... | 125 00 | 6 00 | | | | 131 00 |
| " Dominion lands and registry office..... | | 1,123 95 | 668 03 | 494 12 | 60 00 | 2,346 10 |
| " immigrant building..... | | 1 35 | 512 02 | 70 62 | 9 35 | 593 34 |
| " post office, &c..... | | 1,315 27 | 1,548 91 | 2,303 42 | 53 00 | 5,220 60 |
| " old..... | | 150 00 | 12 25 | 276 40 | | 438 65 |
| Rosthern Dominion lands office..... | 240 00 | | | | | 240 00 |
| " experimental farm..... | | | 167 61 | | | 167 61 |
| Saskatoon immigrant shed..... | | | 251 75 | | | 251 75 |
| " lands office..... | 900 00 | | | | | 900 00 |
| " post office, &c..... | | 822 35 | 400 00 | 711 59 | 54 50 | 2,048 44 |
| Stratcona immigrant shed..... | 108 00 | | 485 76 | 29 90 | 25 45 | 649 11 |
| Vegreville immigrant building..... | 240 00 | | 22 20 | | | 262 20 |
| Vermilion immigrant building..... | | | 142 50 | | | 142 50 |
| Wetaskiwin immigrant building..... | 90 00 | | | | | 90 00 |
| Wainwright immigrant building..... | | | 209 73 | | | 209 73 |
| Wilkie immigrant building..... | 7 00 | | 76 30 | | | 83 30 |
| Yonkers immigrant building..... | | | 171 27 | | | 171 27 |
| Yorkton Dominion lands office..... | 900 00 | | 451 95 | | | 1,351 95 |
| Stettler immigrant building..... | 200 00 | | 116 02 | | | 316 02 |
| Swift Current immigrant building..... | 1 00 | | 67 55 | | | 68 55 |
| Total for Sask. and Alberta..... | 17,082 52 | 12,302 67 | 17,015 04 | 13,261 99 | 1,311 19 | 60,973 41 |
| <i>British Columbia.</i> | | | | | | |
| Agassiz experimental farm..... | | | 82 55 | | | 82 55 |
| Atlin post office..... | | 139 75 | 85 00 | 99 50 | | 324 25 |
| Cumberland post office..... | | 350 15 | 29 00 | 140 93 | 40 00 | 560 08 |
| Esquimalt custom house..... | | | 16 00 | | | 16 00 |
| Fernie post office..... | | 88 06 | | 10 95 | | 99 01 |
| Kamloops post office..... | | 580 45 | 354 07 | 498 16 | 36 00 | 1,468 68 |
| Ladysmith post office..... | | 575 05 | 22 00 | 19 40 | 14 25 | 630 70 |
| Nanaimo post office, &c..... | | 688 80 | 317 00 | 490 21 | 36 00 | 1,532 01 |
| Nelson post office, &c..... | | 561 50 | 529 75 | 1,036 85 | 72 00 | 2,200 10 |

SESSIONAL PAPER No. 19

PART II.—STATEMENT B.—EXPENDITURE—Continued.

| Name of Building. | Rents. | Salaries of and Supplies for Engineers. | Heating. | Lighting. | Water. | Total. |
|--|----------|---|-----------|-----------|---------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| <i>British Columbia—Con.</i> | | | | | | |
| New Westminster Indian and Fisheries offices..... | | 515 80 | 160 50 | 29 49 | 30 41 | 736 20 |
| " engineer's office..... | | | | 2 10 | | 2 10 |
| " post office, &c..... | | 689 77 | 520 00 | 634 75 | 81 28 | 1,945 80 |
| Roseland post office, &c..... | | 574 75 | 539 12 | 939 12 | 91 85 | 2,144 84 |
| Vancouver examining warehouse..... | 5,407 34 | | 179 32 | 840 64 | | 6,427 30 |
| " post office, &c., and public building..... | | 3,513 53 | 1,578 50 | 439 61 | 58 38 | 5,590 02 |
| " post office, old..... | | 44 90 | 45 58 | 198 47 | 15 24 | 304 19 |
| " steamboat inspection office..... | 180 00 | | | | | 180 00 |
| " post office..... | | 125 80 | 374 50 | 2,811 46 | 110 78 | 3,422 54 |
| " Chinese isolation hospital..... | 333 32 | | 214 78 | 306 60 | 43 75 | 898 45 |
| Victoria marine and Indian office (old custom house)..... | | 763 25 | 382 80 | 114 25 | 25 50 | 1,285 80 |
| " Chinese hospital..... | 499 98 | | | | | 499 98 |
| " post office, &c., new..... | 126 00 | 3,458 40 | 1,253 20 | 2,215 60 | 60 75 | 7,113 95 |
| " old post office..... | | 220 00 | | | 56 95 | 276 95 |
| " marine hydro-service office, hospital..... | | | 121 75 | 42 20 | 35 15 | 199 10 |
| " Chinese immigrant building hospital..... | | | | 306 60 | 52 50 | 359 10 |
| William's Head quarantine station..... | | | 6,289 24 | | | 6,289 24 |
| Total for British Columbia..... | 6,546 64 | 12,889 96 | 13,094 66 | 11,196 89 | 860 79 | 44,588 94 |
| Generally..... | | | 1,880 12 | 1,584 73 | | 3,464 85 |

1 GEORGE V., A. 1911

PART II, STATEMENT C.—Showing the amounts loaned by Government under the authority of special Acts of Parliament, and upon the security of debentures of the borrowing corporation. The works upon which these funds are expended are of a quasi-public nature, and the several advances have been made upon the recommendation of the Honourable the Minister of Public Works, and after inspection by the Chief Engineer.

| To whom Loaned. | Parliamentary Authority. | Purpose. | Amount. |
|----------------------------------|------------------------------|--|-----------|
| | | | \$ cts. |
| Harbour Commissioners of Quebec. | 62-63 Vic., ch. 34, sec. 34. | Improvements to Princess Louise dock | 67,056 65 |

PART III

REPORT

ON

PUBLIC BUILDINGS THROUGHOUT THE DOMINION

FOR THE FISCAL YEAR ENDED MARCH 31, 1910.

BY THE

CHIEF ARCHITECT

PUBLIC WORKS, CANADA,
CHIEF ARCHITECT'S OFFICE,
OTTAWA, July 6, 1910.

R. C. DESROCHERS, Assistant Secretary,
Department of Public Works.

SIR,—I am sending you herewith, annual report of works executed under this branch during the fiscal year ended March 31, 1910.

D. EWART,
Chief Architect.

PROVINCE OF NOVA SCOTIA.

AMHERST.

PUBLIC BUILDING.

An illuminated tower clock was installed, the heating boiler was retubed and repairs were made to roof, joinery, &c.

Work done under supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

BRIDGEWATER.

PUBLIC BUILDING.

This building, which was described in a previous report, is completed, fitted up and has a hot water heating system installed.

CANSO.

PUBLIC BUILDING.

An illuminated tower clock was installed, under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

GLACE BAY.

PUBLIC BUILDING.

This building, which was described in my report of last year, is completed and occupied.

HALIFAX.

CUSTOM HOUSE.

Repairs were made to furniture and fittings, under the supervision of C. E. W. Dodwell, Resident Engineer and Inspector of Public Buildings, Nova Scotia, Halifax, N.S.

1 GEORGE V., A. 1911

HALIFAX.

DOMINION BUILDING.

This building, which was described in my report of last year, is still in progress of erection.

Plans and specifications prepared by this department.

Contractor for construction of building—M. E. Keefe.

Contractor for hot water heating system—G. A. Wooten & Co.

Contractor for elevators—The Otis Fensom Co.

Contractor for specie vault—J. & J. Taylor.

IMMIGRATION BUILDING.

Repairs and improvements were made to carpentry and repairs to plastering, painting, lighting and plumbing. Some new hose and a gas stove were supplied. All done under the supervision of C. E. W. Dodwell, Resident Engineer and Inspector of Buildings, Nova Scotia, Halifax, N.S.

LAWLORS ISLAND QUARANTINE.

Additional cast iron water pipe was laid and extensive renewals of the wharf were made under the supervision of C. E. W. Dodwell, Resident Engineer and Superintendent of Public Buildings, Nova Scotia, Halifax, N.S.

PICTOU.

POST OFFICE.

A new copper covering with eavestroughs and down pipes was put on roof, a large portion of the interior was cleaned, painted, kalsomined, varnished, &c., the main doors painted, grained and varnished; some linoleum and furniture were supplied, and repairs were made to woodwork, fences, gates, floors, masonry and pointing.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, N.B.

CUSTOM HOUSE.

A new floor, including renewal of joists, was laid in part of basement and repairs were made to tower, brickwork, painting, glazing and door.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, New Brunswick.

SHELBURNE.

PUBLIC BUILDING.

This building, which was described in my last year's report, is completed.

SPRINGHILL.

PUBLIC BUILDING.

Concrete walks were constructed about the property, the masonry was pointed, new gates were provided as also clothes closets and the roof, drains, &c., repaired.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, New Brunswick.

PROVINCE OF NEW BRUNSWICK.**BATHURST.****PUBLIC BUILDING.**

The stonework was pointed; a new front porch and some additional storm sashes were supplied, the roof was painted and repairs were made to pump, furnace, &c.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, New Brunswick.

CHATHAM.**MIDDLE ISLAND QUARANTINE.**

The residence was repaired, the roof shingled and painted, new hardwood floors were laid and sundry repairs and improvements effected.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, New Brunswick.

PUBLIC BUILDING.

The interior and exterior woodwork was painted, and repairs were made to eaves brackets, water conductors, flag mast, &c.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, New Brunswick.

NEWCASTLE.**PUBLIC BUILDING.**

The alley area was concreted, a new platform built over well, the public lobby of post office painted and varnished, a new iron gate supplied, and repairs made to joinery, floors, locks, &c.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, New Brunswick.

SUSSEX.**PUBLIC BUILDING.**

Additional fittings were supplied for post office and repairs were made to metal covering of roof, customs clock, fence, &c.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, New Brunswick.

ST. JOHN.**CUSTOM HOUSE.**

The basement concrete floor had a portion renewed where sunken and broken; many of the halls and offices were painted, their hardwood varnished, rooms kalsomined, outside joinery painted and the radiators and coils were bronzed; new signal mast and weather vane were furnished and the time ball repaired; a new doorway in Marine Office was constructed; additional electric light wiring was done; some additional furniture and linoleum were supplied; a considerable amount of painting, varnishing and kalsomining was done, and repairs were effected to roof, plastering, carpentry, plumbing, heating, hoist, machinery, furniture, &c.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, New Brunswick.

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ST. JOHN.

POST OFFICE.

An iron cased rat-proof room provided with iron boxes was built in basement and compartments and drawers elsewhere in the building were tin-lined to protect them from invasion of rats; prism lights were put in workroom sashes to increase light; additional electric wiring and communicators were installed; a large quantity of painting, kalsomining and varnishing was done; the street letter boxes were painted; brass plates for p.o. boxes and newspaper receptacles, some furniture, some disinfecting machines, lock boxes, new ensign, linoleum, bulletin boards and ironmongery were supplied, and repairs and renewals were effected to lavatories, elevator, wood-work, furniture, floors, newspaper chute, fittings, glazing, stamping pads and heating.

At the Intercolonial Railway station a mail room was fitted with desk, tables, shelves, &c.

Work supervised by D. H. Waterbury, Superintendent Public Buildings, New Brunswick.

IMMIGRATION BUILDING.

Floor piles and sill of south side were repaired and trussed; a new iron smoke stack to east chimney was provided; counter and fixtures for exchange broker were built; considerable glazing was done and repairs were made to W. C.'s, sinks, plumbing, ranges, furnace, roof, gutter, down pipes, &c.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, New Brunswick.

IMMIGRATION HOSPITAL.

A new steel ceiling was put up in front room, first floor, fences were whitened, glazing and general repairs were effected throughout.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, New Brunswick.

SAVINGS BANK.

The walls and ceilings were cleaned and kalsomined; the woodwork was painted, the stonework was repaired and cement finished; the entrance doors were cleaned, filled and varnished; the lawn cesspool was repaired and the asphalt gutter and water shed was renewed; the flag staff was repaired, painted and rerigged, and the window sashes were re-corded. Minor general repairs were effected, under the supervision of D. H. Waterbury, Superintendent Public Buildings, New Brunswick.

PARTRIDGE ISLAND.

QUARANTINE STATION.

Improvements and repairs were effected at doctor's residence; gas fittings and fittings to steward's residence; painting and papering to caretaker's residence; hose reel and hose were supplied to station; smoke pipe was renewed at disinfecting house; ladders were supplied, and repairs were made to shore landing gangway, old hospital, gas plant, &c.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, New Brunswick.

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ST. JOHN WEST.

POST OFFICE.

A tower clock was installed in the tower which was repaired and had the roof covered with copper; concrete steps were built at the letter drop; the front stone steps and parts of the building were pointed; the entrance doors were cleaned, filled and varnished; the ground floor lobby and general delivery room were cleaned, painted, kalsomined and varnished, and repairs were made to plastering, joinery, plumbing, roof covering, eaves troughs and conductors, gates, &c.

Work supervised by D. H. Waterbury, Superintendent Public Buildings, New Brunswick.

TRACADIE.

LAZARETTO.

The original heating furnaces were removed and replaced by four cast iron sectional furnaces. Repairs were made to heating apparatus, steam pump, annex roof and furnace room floor.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, New Brunswick.

PROVINCE OF PRINCE EDWARD ISLAND.

CHARLOTTETOWN.

DOMINION BUILDING.

The post office fittings were altered, added to and rearranged; some floor tiling was done; a room for Marine and Fisheries Department was constructed on first floor; the Inland Revenue office was reeiled; additions to and alterations of electric wiring were made; a ceiling was put in postmaster's office, and some fittings and furniture were supplied Savings Bank.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, New Brunswick.

GEORGETOWN.

PUBLIC BUILDING.

This building, which was described in my report of last year, is completed, fitted with a hot water system and occupied.

Plans and specification prepared by this department.

Clerk of works, M. D. McPhee.

Contractor, B. D. Humphrey.

Contractors for heating system—Sterling, Shaw & Peardon.

MONTAGUE.

PUBLIC BUILDING.

The post office fittings were altered and improved and minor general repairs effected.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, New Brunswick.

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SUMMERSIDE.

PUBLIC BUILDING.

Additions were made to fittings; a new floor was laid in examining warehouse and repairs were effected to masonry, joinery, boiler, floors, &c.

Work done under the supervision of D. H. Waterbury, Superintendent of Public Buildings, New Brunswick.

PROVINCE OF QUEBEC

COOKSHIRE.

PUBLIC BUILDING.

This building, which was described in last year's report, is completed, heated with a hot water apparatus and ready for occupation.

Plans and specification prepared by this department.

Resident architect, J. W. Grégoire.

Contractors, Simoneau & Dion.

Contractor for heating apparatus, E. G. E. Delorme.

Contractors for P.O. fittings, G. P. McGrath & Co.

DUNDEE.

CUSTOM HOUSE.

A permanent porch or hood was constructed at the principal entrance. The building was wired and fitted up with an electric lighting system.

Work done under the supervision of G. S. Gingras, Montreal. P.Q.

FARNHAM.

PUBLIC BUILDING.

The arrangement of the fittings was altered, the number of lock boxes was increased, hardwood flooring was laid, the entire ground floor was cleaned, tinted and painted and the main entrance door practically renewed.

Work done under the supervision of G. S. Gingras, Montreal, P.Q.

FRASERVILLE.

PUBLIC BUILDING.

The Customs and Inland Revenue offices on the first floor were ceiled with sheet metal; the ceilings, walls and woodwork painted, and all the furniture cleaned and varnished. This building was rewired and fitted with a complete new light installation.

Work supervised by G. S. Gingras, Montreal, P.Q.

GROSSE ILE,

QUARANTINE STATION.

A one story and attic wooden schoolhouse measuring on plan 36 feet 6 inches by 33 feet, on a concrete foundation, and with a one story building, 23 feet by 12 feet, in

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rear for woodshed and latrines, was constructed. The main floor consists of a class room 30 feet by 24 feet 6 inches, a bedroom, a kitchen and a vestibule. The attic is undivided.

Plans and specification prepared by the department.

The pillars supporting the water mains were repaired and two four-inch Emond filters were connected with main pipe for two tanks opposite eastern wharf.

The hospital steward's new quarters was finished. New divisions were made in centre building and in sailors' quarters to make further lodgings for employees.

JOLIETTE.

ARMOURY BUILDING.

This building, which was described in last year's report, is constructed, lighted, heated and fitted up ready for occupation.

Plans and specifications prepared by this department.

Contractors, Simoneau & Dion.

Contractors for heating, Tremblay & Francoine.

Contractors for lighting, Empire Electric Mfg. Co.

LACHINE.

PUBLIC BUILDING.

The main entrance doors were repaired, under the supervision of G. S. Gingras, Montreal, P.Q.

LONGUEUIL.

PUBLIC BUILDING.

A fire escape was built on the rear of the building, a water filter was fitted to the water service and a concrete sidewalk was laid the full length of the frontage as well as to the entrance door.

Work supervised by G. S. Gingras, Montreal, P.Q.

MAGOG.

PUBLIC BUILDING.

This building, which was described in a previous report, is practically completed.

Plans and specification prepared by this department.

Clerk of works, A. J. Whitehead.

Contractor for construction of building, R. Cameron.

Contractors for wiring, P. E. Marchand & Co.

Contractor for heating, Albert Beauchene.

MONTREAL.

POSTAL STATION 'D,' POINT ST. CHARLES.

This building which was described in my last year's report, is completed.

Plans and specifications prepared by this department.

Superintending architect, Alfred Piché.

Contractors, Messrs. Morssen & Co.

Contractor for heating, Alex. Mackay & Co.

Contractor for lighting, Empire Electric Mfg. Co.

Contractor for fittings, D. H. Langlois & Co.

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MONTREAL.

GENERAL POST OFFICE—ADDITION.

This work, which was described in my last report, has been in steady progress since, and is expected to be completed during the next fiscal year. Hot water heating and electric lighting are installed.

CUSTOM HOUSE.

After the explosion, which took place in the port, broken windows were repaired and new glass put in; alterations of long room were made, a new glazed division was fixed on large counter; the automatic parcel carriers had to undergo repairing; wire grilles were fixed for cashiers' offices; a new mezzanine room was constructed above long room, with hardwood floor and glazed inclosure and stairs; a small hoist for parcels and stationery was erected; a lavatory, tap, waste pipe, &c., were also installed; the counter in 'landing' was made wider and a new glazed division fixed on it with brass grilles to wickets and the interior of this room was repaired and painted throughout; repairing was done in long room, record and other rooms, skylights, first and second floor, stairs, &c. All walls of the above named rooms were put in good repair and kalsomined. All interior openings and all painted woodwork were painted over and hardwood work and stairs re-varnished.

Three extract pipes from ceiling of long room with three cowls on roof were put in to improve the ventilation; a number of cupboards and heating coils were put in; renewals of lighting, wiring and glazing were made, and repairs effected to heating, plumbing, gas and water system.

EXAMINING WAREHOUSE.

A new galvanized iron roof covering was put on and a new skylight to each freight elevator. A new vertical steel shaft with gearing to engage the counter-shafting was put in. The walls and ceilings were cleaned, repaired and tinted and the woodwork and iron work painted. Repairs were effected to hatchway, platforms, elevators, heating, plumbing, painting, masonry, pointing and brick setting of boilers.

EXPRESS BUILDING, D'YOUVILLE PLACE.

A metal covered porch for the entrance of goods was erected on the McGill street side; a complete electric light system was installed; the stairs were inclosed to prevent down draughts; doors were broken in the walls between the two buildings; partitions and counters were changed in position and pigeon-hole cupboards provided; a new lavatory was put in as also urinals, and there were supplied five window blinds and several stools, chairs and desks. Two signs were placed on the building, and the roof was repaired frequently.

Work done under the supervision of C. Desjardins, Clerk of Works, Montreal.

INLAND REVENUE.

All the walls were washed, repaired and tinted, the woodwork cleaned and painted and the hardwood cleaned and varnished. Linoleum was laid in Inspector's room. The roof and down pipes were repaired.

Repairs were also done to heating system, two new lavatory basins added, plumbing and gas fitting was overhauled and repairs made to w.c. urinals.

Work done under the supervision of C. Desjardins, Clerk of Works, Montreal.

GENERAL POST OFFICE, ST. JAMES STREET.

A new main water supply pipe was put in as also a new smoke stack. A few temporary partitions were put in, a number of rooms were cleaned and tinted, some

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furniture and carpets were supplied and repairs were made to elevators, heating, plumbing, lighting, &c., and the street newspaper and letter boxes were painted, partly under the supervision of C. Desjardins, Clerk of Works and partly under the supervision of H. Lymburner, Superintendent, Montreal, P.Q.

POSTAL STATION 'B'—(St. Catherine West).

The lane in rear of building was paved with asphalt; a partition was made in cellar; the walls and ceilings of office were cleaned and tinted and the columns painted; a new stamping machine was supplied and the heating, plumbing and lighting system were altered, extended and repaired, and some chairs, desks and cupboards supplied.

Work done under the supervision of C. Desjardins, Clerk of Works, Montreal.

POSTAL STATION 'C'—(Amherst street).

Rubber was supplied for observation gallery floors and additional gas lights, electric lights, urinals and furniture were supplied.

Work done under the supervision of C. Desjardins, Clerk of Works, Montreal.

HOCHELAGA.

POSTAL STATION—(St. Catherine East).

Repairs and alterations to lighting were effected and the plumbing and heating made good.

Work done under the supervision of C. Desjardins, Clerk of Works, Montreal.

ST. HENRI.

POSTAL STATION.

The roof was repaired as also the boiler and grates. The lighting system was altered and added to and repairs were made to plumbing.

Work done under the supervision of C. Desjardins, Clerk of Works, Montreal.

NOMININGUE.

PUBLIC BUILDING.

Repairs were effected to all door and window openings and grilles were fitted in first floor for heating purposes.

Work supervised by G. S. Gingras, Montreal, P.Q.

NOMININGUE.

IMMIGRATION BUILDING.

This building, which the Government recently purchased, underwent improvements and repairs.

The drainage was connected with the street sewer; a bath, a water closet, two lavatory basins and one sink were fitted up and connected; the interior was cleaned, tinted and painted; the main entrance was enlarged; the gallery was repaired, and a cement foot path was laid the full length of the frontage of the property.

Work supervised by G. S. Gingras, Montreal, P. Q.

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PLESSISVILLE.

PUBLIC BUILDING.

This building, which was described in last year's report, is completed.

Plans and specification prepared by this department.

Clerk of works, Alfred Mathieu.

Contractors, Paquet & Godbout.

Contractor for heating system, F. Derooy.

Contractors for wiring, The Standard Construction Company.

Contractors for fittings, J. F. Schell Company.

QUEBEC.

CUSTOM HOUSE.

On October 16, 1909, the upper portion of this building was destroyed by fire and the officials' furniture, &c., removed to the examining warehouse, which was fitted up as customs offices.

The sidewalk along the St. Andrew street boundary was renewed.

DOMINION ARSENAL STORES BUILDING.

Fifty feet of stone fence wall, 8 feet 4 inches in height, was constructed and a pair of wrought iron gates, 10 feet 6 inches in width by 7 feet 7 inches in height, was hung thereto.

In the building, one metal cabinet was provided and eight bracket lamps installed.

EXAMINING WAREHOUSE.

On the destruction of the upper portion of the Custom House by fire, the Customs offices were established in the examining rooms of the first floor and portions of the ground floor which were partitioned and divided to suit the requirements and were furnished with water closets, lavatories, heating coils, electric lights, furniture, office fittings, carpets, &c. A number of the heating coils were removed from the Customs building and re-used here. The steam-power elevator was removed and replaced by an electric freight elevator.

DETENTION BUILDING—SAVARD PARK.

300 feet of 2½ inch linen hose with couplings, &c., also some linoleum were supplied. Repairs were made to floors, heating, plumbing, carpentry, &c. Five more rooms were fitted up in the old shed.

IMMIGRATION BUILDING—PRINCESS LOUISE EMBANKMENT.

Twelve new openings were made in wall and a like number of frames and doors inserted in the old baggage shed. Two ranges of w.c.'s with a building to contain them were erected; 1 bed, 4 chairs, 1 mirror, 2 rugs and 1 wardrobe were supplied the agent, a desk and chair to the assistant agent and a washstand and water service to Captain Lebel's office; hardwood flooring was laid in one room; 5 additional electric lights were installed; 450 feet of 2½-inch linen hose with couplings, nozzles and steel reel with axe, crowbar, tool chest, &c., were provided; a partition was erected in the G.T. Ry. ticket office; 3 stoves were repaired, and some linoleum, window blinds and a clock were provided.

INLAND REVENUE OFFICES.

Temporary accommodation was leased in Richelieu & Ontario Navigation building and some additional furniture and requisites were provided.

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QUEBEC EAST (ST. ROCHS).

POST OFFICE BUILDING.

This building, which was described in my last year's report, is still in progress of construction.

Plans and specifications prepared by this department.

Superintendent architect, René P. Lemay.

Contractors, Messrs. Jinchereau & Lamonde.

Contractors for hot water heating system, Vandry & Matte.

Contractors for electric lighting, Empire Electric Manufacturing Company.

RICHMOND.

PUBLIC BUILDING.

The plumbing was renewed and hardwood floors laid throughout and the caretaker's quarters and the hot water furnace was repaired.

Work supervised by G. S. Gingras, Montreal, P.Q.

RIGAUD.

ARMOURY.

A lavatory room was formed and a water closet urinal and sink fitted up and connected, under the supervision of G. S. Gingras, Montreal, P.Q.

RIMOUSKI.

PUBLIC BUILDING.

The two main entrances were provided with permanent porches.

Work supervised by G. S. Gingras, Montreal, P.Q.

ARMOURY.

On January 4, 1910, a contract was entered into for the construction of this building on a plot of ground having a frontage of 96 feet on St. Jean Baptiste street by a depth of 100 feet.

The building is two stories of brick on a stone basement measuring 30 feet frontage by 38 feet depth. Excepting in the basement, where the floor is concrete and the partitions brick, the floors, partitions, stairs and roof are of wood.

The basement contains a furnace room, a fuel room, 2 store-rooms and a staircase hall; the ground floor, an assembly room, 2 company c. o. rooms, 2 armouries and 2 entrance vestibules, and on the first floor are a lecture room, a regimental c. o. room and a q. m. store-room.

Plans, &c., prepared by this department.

Contractors, Dumont & McLean.

ST. HYACINTHE.

PUBLIC BUILDING.

The Customs offices were cleaned and painted, a new section was provided for the heating furnace and some small general repairs were effected—all under the supervision of G. S. Gingras, Montreal, P.Q.

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ST. HYACINTHE.

INLAND REVENUE BUILDING.

Additional heating surface was provided for the first basement floor, and the yard fence and gates were repaired.

Work supervised by G. S. Gingras, Montreal, P.Q.

SHERBROOKE.

PUBLIC BUILDING.

The Customs offices were enlarged, cleaned, painted, had hardwood floors laid and a new counter and glass screen supplied.

Work supervised by G. S. Gingras, Montreal, P.Q.

DRILL HALL.

This building, which was described in my report of last year, is completed ready for occupation.

Plans, &c., prepared by this department.

Resident superintendent, J. W. Grégoire, architect.

Contractors for construction of building and for heating, Messrs. Simoneau & Dion.

Contractor for electric wiring, A. E. Choquette.

Contractor for electric fixtures, MacCallum & Co.

PROVINCE OF ONTARIO.

BARRIE.

PUBLIC BUILDING.

The external stonework, brickwork, woodwork and ironwork as well as the street letter boxes were painted; the eaves, troughs and conductors were repaired, and a water closet was installed in the caretaker's quarters.

Work supervised by Thos. H. Hastings, Clerk of Works, Toronto, Ont.

BELLEVILLE.

PUBLIC BUILDING.

The exterior and interior of the building were cleaned, painted, &c., under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

BERLIN.

PUBLIC BUILDING.

A new fence, a new floor in attic and a concrete platform were constructed; the basement walls were whitened; the heating apparatus was connected with the Central Heating Company, and repairs were made to furniture and brickwork, under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

BRAMPTON.

PUBLIC BUILDING.

A bath-room was fitted up in caretaker's quarters and a new range boiler and a sink in kitchen, while some minor repairs were made to carpentry, painting, lighting

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and letter boxes, under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

BRANTFORD.

PUBLIC BUILDING.

The heating boiler had new tubes and new grates, and some minor repairs were made to fittings, all under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

BRIDGEBURG.

PUBLIC BUILDING.

The interior was papered, kalsomined and painted and filing cases were supplied to the Customs, all under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

CHATHAM.

PUBLIC BUILDING.

Alterations of the post office screen were effected and some addition made thereto, all under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

CLINTON.

POST OFFICE BUILDING.

An addition was made to the septic tank and a fire escape and balcony erected. All under the supervision of Thos H. Hastings, Clerk of Works, Toronto, Ont.

COBOURG.

PUBLIC BUILDING.

The building was cleaned, kalsomined and painted under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

DUNDAS.

PUBLIC BUILDING.

Two wash basins were fitted up, under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

DURHAM.

ARMOURY.

This building, which was described in my last annual report, is still in progress of construction.

Plans and specification prepared by this department.

Clerk of Works, James Lenahan.

Contractor, Hugh McDonald.

FORT WILLIAM.

PUBLIC BUILDING.

On 19th November, 1908, a contract was entered into for the construction of a one story addition in the rear and the entire length of the post office portion, 58 feet

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by a depth of 33 feet. A portion of the rear wall of the post office working room was removed and the wall above supported on iron beams, thus providing uninterrupted floor space throughout the working accommodation of the post office. The addition is completed and occupied.

Plans, &c., prepared by this department.

Clerk of Works, W. J. Rankin.

Contractor for construction of addition, Chas. H. Sherwood.

Contractor for heating, the Bennett-Wright Company.

Contractor for painting and kalsomining, Alex. S. Ross.

Contractor for fittings, The Ottawa Furniture Company.

Contractor for lighting, the Western Electric Company.

GLENCOE.

PUBLIC AND ARMOURY BUILDING.

This building, which was described in last year's report, is completed ready for occupation.

J. E. Hull, Clerk of Works.

Plans and specifications prepared by this department.

Contractor, Geo. A. Proctor.

Contractors for fittings, The Chas. Rogers & Sons Company.

Contractors for lighting, The Commercial Electric Company.

Contractors for hot water heating apparatus, Nagle & Mills.

HAMILTON.

PUBLIC BUILDING.

New entrance doors and a three ton depot scale were furnished to post office and the elevators were re-hung with new cables and repacked, all under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

POSTAL STATION 'B.'

Counters, screens, fireproof safe, electric fittings and wire guards were supplied and some painting, varnishing and sign writing was done, under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

KINCARDINE.

PUBLIC BUILDING.

This building, which was described in a previous report, is completed.

Plans and specification prepared by this department.

Clerk of works, Angus Kerr.

Contractor for building, Wm. Nicholson.

Contractor for fittings, The Chas. Rogers Sons Company.

Contractors for lighting, Hall & Dollery.

Contractors for heating, Keith & Fitzsimons.

KINGSTON.

ROYAL MILITARY COLLEGE.

Barrack Accommodation for Stables.

This building, which was described in my report of last year, is completed and occupied.

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Plans and specification prepared by this department.
Resident architect, H. B. Smith.
Contractor, M. Sullivan.

LINDSAY.

PUBLIC BUILDING.

Repairs were made to heating apparatus, plumbing and papering, under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

LEAMINGTON.

PUBLIC BUILDING.

This building, which was described in my last year's report, is still in progress of construction.

Plans and specification prepared by this department.
Clerk of works, Samuel O. Roach.
Contractors, W. J. Leslie & W. A. Mitchell.
Contractors for lighting, The Commercial Electric Company.

LONDON.

CUSTOM HOUSE.

Awnings were supplied for four windows and repairs made to plastering and sidewalk. All under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

MILITARY STORES BUILDING.

Repairs to elevator were effected. All under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

POST OFFICE.

A maple floor was laid in the main office and the columns encased in sheet iron; an oak screen was erected to form a postmaster's office and furniture supplied therefor; a brick and cement pier was built and the cancelling machine installed thereon; wire guards to skylight were furnished, and repairs were effected to boilers. All under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

MARKHAM.

PUBLIC BUILDING.

This building, which was described in last year's report, is completed and occupied.

NIAGARA FALLS.

PUBLIC BUILDING.

The money order screen was altered and extended; renewals of window sills, expansion tank, lavatory tank, furnace grates and gaskets were made and repairs were effected to roof, window frames, furnace and carpentry, under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

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NORTH BAY.

PUBLIC BUILDING.

Interior fittings were supplied, alterations of plumbing were made and repairs made to doors, windows, skylights and door springs, under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

OTTAWA.

BIOLOGICAL LABORATORY, CENTRAL EXPERIMENTAL FARM.

Plumbing and gas fitting of the chemical branch of the laboratory was fitted up by the departmental repair staff.

CANADIAN BUILDING.

This is a rented building on Slater street. For the Interior Department, two blue print baths and fittings, one for the Forestry branch and one for the Immigration branch were fitted up; about 1 dozen electric fans were provided; 111 drop light, 33 goose neck lamps and 25 3, 4 and 5-light fixtures were supplied and fitted up; a lighting system was installed in the Registration branch and call bell systems in the various branches; the various lighting system were changed largely; and there were also supplied 11 window deflectors, 5 fire screens, 9 fly screens, 7 desks, 4 ventilators, 27 tables, drawer case of 84 drawers, 38 chair cushions, 1 plan cupboard, 6½ chairs, 9 step-ladders, 4 doors and frames, 8 cabinets, 3 cloth doors, 100 feet shelving, 11 cupboards, 6 rods and curtains, 9 step-ladders and 16 feet glass partition. A number of lights were reglazed.

EASTERN BLOCK.

The water-closet room of the Finance Department was entirely renovated. The corridor floor of the Finance Department was laid with dolomene. Three new urinals with flushing tanks were put in for the Finance Department and a like number for the Privy Council. There were 26 rooms cleaned, painted and tinted including floor treatment, of which 10 were in the Secretary of State Department, 7 in the Privy Council Department, 4 in the Finance Department, 3 in the Secretary of State Department and 2 in the Justice Department; 12 hardwood floors were laid, 4 in the Secretary of State Department, 3 each in the Privy Council and Indian Affairs departments and 2 in the Justice Department; 26 rods and curtains were supplied, 12 to the Secretary of State Department, 8 to the Finance Department, 4 to the Indian Affairs Department and 2 to the Justice Department. Partitions with doors, &c., were erected—82 lineal feet for the Secretary of State Department, 81 feet for the Finance Department, 16 feet for the Auditor General's Department and 114 feet for the Indian Department; wash basins with water supply, drain connections, &c., were fitted up—3 for the Finance Department, 3 for the Secretary of State Department and 1 for the Justice Department; 6 vaults were shelved for the Secretary of State's Department; 24 lineal feet of shelving was put up for the Finance Department and 45 feet for the Auditor General's Department; 11 new windows and frames were inserted—6 in the Secretary of State Department and 5 in the Finance Department, as also 2 storm sash in the former and 4 deflectors in the latter; 14 cupboards were furnished, 6 to the Indian Department, 4 to the Justice Department, 3 to the Auditor General's Department and 1 to the Privy Council Department; 5 book cases were supplied: 3 to the Auditor General's Department and 2 to the Indian Department; 32 tables were supplied; 10 to the Indian Department, 9 to the Secretary of State Department, 5 to the Justice Department and 4 each to the Finance Department and the Auditor General's Department; 5 fire screens were supplied—3 to the Secretary of

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State Department and 2 to the Auditor General's Department; 4 floors were oiled and shellacked in the Finance; 4 map racks, 6 hat and coat rails with hooks, 2 step-ladders, 6 pairs trestles, 2 desks and 3 stools were supplied to the Indian Department; 3 cabinets, 3 cushions and 3 stands were supplied the Justice, 2 pigeon-hole cases and 12 newspaper files were supplied the Privy Council Department; 5 cloth doors were supplied the Secretary of State Department; 55 lights of glass were reglazed in the Finance Department, 60 in the Secretary of State Department, 25 in the Privy Council Department, 7 in the Auditor General's, 79 in the Indian Department, 26 in the Justice Department and a number in the entrances and corridors; 22 desk lamps were supplied: 14 to the Auditor General's Department, 3 each to the Secretary of State Department and the Indian Department and 2 to the Privy Council Department; 41 drop lights were installed: 20 in the Indian Department, 8 in the Justice Department, 5 in the Auditor General's Department and 4 each in the Secretary of State Department and the Privy Council Department; an 8-light cluster and an electric heater were supplied the Privy Council, 2 3-light clusters to the Finance Department, 2 meridian lamps, 2 brackets and 1 coil to the Indian Department, 3 3-light clusters and 15 picture frames to the Justice Department for which 3 clocks and 1 fan were wired and 356 yards of woodwork painted; 9 stools were supplied the Auditor General's Department and 5 fixtures to the Secretary of State Department. A number of chairs were re-upholstered and repairs were made to call bells, glazing, &c.

There were minor jobs such as lettering, painting, general repairs, &c. The double windows and summer blinds were taken off, stored, cleaned and put on periodically, and the roofs, footpaths and roads were kept free from snow during winter.

Work done under the supervision of this department.

John Shearer, jr., superintendent.

GEOLOGICAL MUSEUM, SUSSEX STREET.

Nineteen drop lights, 9 goose neck lamps and 12 tungsten lamps were installed and a number of shades, mantels, &c., were supplied. The bells were repaired and 24 lights were glazed.

Work done under the supervision of this department.

John Shearer, superintendent.

GOVERNMENT HOUSE.

Of sidewalk there was renewed 137 lineal feet of 3 feet 6 inches wide, 560 lineal feet of 3 feet 3 inches wide and a gangway 10 feet by 4 feet while the sidewalk throughout was repaired, using 2,900 feet B.M. of 2-inch plank. Of new fencing there was 116 lineal feet, 4 feet high, painted, 93 feet, 6 feet 6 inches high, rough board, 872 feet of 7 feet high boundary fence together with 2 painted turnstiles, 2 painted gates, 2 dressed moulded and painted gate posts, 18 new posts for wire fence, 200 lineal feet of base with 25 new fence post bases painted. The old root house 66 feet by 16 feet by 7 feet was entirely rebuilt with concrete floor, vent shafts, double doors, bin partitions and electric wiring. A doorway was made through concrete foundation of boiler room, also outside concrete steps, the whole inclosed by glass sides and galvanized iron roof; the door in the end of the violet house was raised 18 inches and an addition 18 feet by 16 feet by 10 feet was built to the cool room for flowers. A part of greenhouse cellar was partitioned off for the growing of mushrooms. In the violet house, the beds were made 10 inches higher, the shelving was rearranged and additional heating mains were put in. In the gardens, 6 hot-bed frames with 18 sashes, a plunge bed for azaleas, 475 lineal feet of 4-inch tile and 12 stand-pipes and connections were laid; 42 posts for training vines, 400 boxes for seed planting, 3 trellis frames, 150 stakes for supports, 150 stakes for marking beds, 500 plant labels and 150 feet of 1½-inch hose for watering were supplied.

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A tennis lawn 120 feet by 95 feet was formed on the old bowling green, from which eight inches of soil was removed and replaced by gravel, earth and sod well rolled.

In the house dining room, the ceiling cornices, door and window architraves, doors and skirtings were removed and replaced by new cornice, new architraves, mahogany doors and panelled wainscot. New electric fixtures, an electric heater and 2 new tables were supplied to this room. The top of chimney over His Excellency's office being injured by damp had 5 feet of the height removed and rebuilt in firebrick. A concrete floor was laid and walls built in shed to hold wood ashes for gardens; the cement covering of outside walls was thoroughly renewed and the lower part painted; the 2 w.c.'s and the lavatory off front hall were removed and the room floored, repaired, painted and tinted; 26 mosquito screens, 6 step-ladders, 2 tables, 3 cases, 42 packing cases, 1 marble mortar and 2 Quebec heaters were supplied.

At the house, there were 2,180 yards of 2 and 3 coats painting, 1,089 yards cleaning and tinting, 210 yards staining and shellacking, 15 yards bronzing, 108 rolls of papering and 188 feet of reglazing; at the greenhouses, 1,275 yards 2 and 3 coats painting, 350 yards limewashing, 22 yards japanning, 448 feet of reglazing and 32 days scraping and frosting.

Repairs and renewals were made to furniture, heating, plumbing, water and bell services, joinery, plastering and glazing. There were supplied 1 refrigerator, 1 oil heater, 1 stove, 12 lanterns, 2 meat mincers, 9 pans, 1 doz. each knives, forks and spoons, 2 graters, 3 broilers, 3 strainers, 18 glass dishes, 98 crockery bowls, 36 jugs, 50½ doz. glasses, 12 china bowls, 27 doz. plates, 24 doz. cups and saucers, 109 yards of carpet, 1 rug and 33½ yards linoleum were supplied. Of linen there was supplied 12 kitchen table cloths, 12 doz. kitchen rubbers, 6 dozen stable rubbers and 12 china cloths.

At Rideau Cottage, 27½ squares of roof were reshingled and 3 squares of galvanized iron covering laid on deck roof as well as 4 chimneys flashed; 2½ squares of 1½-inch flooring were renewed on verandah; a storm porch was built at rear entrance; double windows were made for basement; there were 914 yds. of 2 and 3 coat painting, 1,170 yards cleaning and tinting, 26 yards enamelling, 98 rolls of papering with necessary cleaning walls, cleaning, staining and varnishing furniture and lettering packing cases. All carpets were cleaned and relaid. Furniture was supplied as follows:—1 piano and bench, 1 iron and 2 brass bedsteads with mattresses and bolsters, 1 dresser, 1 chest of drawers, 3 easy chairs, 5 pairs curtains, 2 table covers, 2 quilts, 8 cushions and 1 screen; 52½ yards Wilton carpet, 57½ yards Brussels carpet, 84½ yards velvet pile carpet and 26 yards linoleum were supplied and the old carpets were fitted to 4 servants' basement rooms; 50 feet of ½-inch hose were supplied and also 1 bedroom set, 8 odd pieces of bedroom crockery, 1 soup tureen, 15 cups and saucers and 17 tumblers and glasses.

The conservatories were kept in order, the hay was cut and housed, the lawns, drives, &c., rolled and otherwise tended. The ice-house was stored with ice. The roofs, paths, slides, rinks, &c., were cleared of snow by the departmental staff, by whom the grounds, lawns, gardens and plant-houses were maintained. The curling and skating rinks were flooded and tended and the toboggan slide was kept in order.

The usual periodic cleaning, packing and unpacking were done; arrangements for and attendance on entertainments were furnished, and the rinks, slides, &c., kept in order.

Work done under supervision of Wm. Hutchison, superintendent.

IMPERIAL BANK BUILDING, WELLINGTON STREET.

This is a rented building. The Secretary's branch of the Interior Department and the law clerks branch thereof were moved hereto from the Langevin Block. All the rooms were cleaned, tinted, painted and had floors treated. A large

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number of signs were written and furniture touched up. A new drain was put in and repairs of masonry, brickwork, carpentry and plastering was done throughout and an old stairway was removed.

Work done under the supervision of this department.

John Shearer, superintendent.

LANGEVIN BLOCK.

In the chemical laboratory of the tobacco division, 2 sinks, a fume cupboard, a ventilation flue, a water storage tank and the necessary water and gas service as well as drainage supplied and fitted up; a new post office with pigeon-holes and counter was fitted up for Agriculture Department; 3 adding machines were connected for the Post Office Department; 11 rooms were cleaned, tinted, painted and had floor treated, 7 for the Post Office Department and 4 for the Agriculture Department; 16 new doors and frames were supplied, 12 for the Post Office Department and 4 for the Agriculture Department; 6 windows and frames were inserted for the Post Office Department; 92 drop lights were supplied, 57 to the Agriculture Department, and 35 to the Post Office Department; 15 desk lamps were supplied, 10 to the Agriculture Department and 5 to the Post Office Department; 9 rods and curtains were supplied to the Agriculture Department; 21 chair cushions were supplied, 14 to the Agriculture Department and 7 to the Post Office Department; 6 book cases were supplied to the Agriculture Department; 9 tables were supplied to the Agriculture Department and 2 to the Post Office Department; 6 step-ladders each were supplied to the Agriculture Department and the Post Office Department; 259 lineal feet of shelving was fitted up for the Agriculture Department and 60 feet for the Post Office Department; 2 radiators each, were fitted up and connected for the Agriculture Department and the Post Office Department; 5 water closet basins were set up and connected for the Post Office Department to which were supplied 2 cupboards, 12 boxes, 6 window poles, 2 crates, 16 tungsten lamps, as also 12 wire and 2 repp panels for screen; 6 window poles, 16 fly-screens, a number of electric irons and 50 feet of partition were supplied the Post Office Department, and a large number of articles of furniture repaired, lights reglazed and minor repairs in all trades.

The corridors of the first, second and attic floors were cleaned, tinted and painted, including 5,306 yards washing and tinting, 1,295 yards of 2 coat painting, 4,109 lineal feet of piping and 49 radiators as well as 818 yards of elevator cage coated with aluminum paint.

Work done under the supervision of this department.

John Shearer, superintendent.

MAJOR'S HILL PARK.

Usual and ordinary repairs were effected and the grass and flower display well kept up, the chrysanthemum display being especially good and the spring display consisting of 44,000 bulbs.

Work carried on under the supervision of the department.

John Shearer, superintendent.

Thomas Davis, gardener.

MILITIA BUILDING, SLATER STREET.

Two electric blue printing machines were set up and connected; 4 rooms were cleaned, tinted and painted and had floor treated; repairs were made to elevator and drain; there were supplied 4 pigeon-holes cupboards, 2 book cases, 4 tables, 4 step-ladders, 4 glass cases, 9 window deflectors, 4 chair cushions, 40 feet shelving and 1

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panel partition; 2 fireplaces were bricked up and repairs were made to 26 chairs, 9 desks, 7 tables and locks and ironmongery; 48 lights were reglazed, a number of signs were written and furniture painted and varnished.

Work done under the supervision of this department.

John Shearer, superintendent.

OFFICES NO. 98, WELLINGTON (Nagle Block).

This is a rented building, 4 rooms were cleaned, tinted and painted and the floors treated.

Work done under the supervision of the department.

John Shearer, superintendent.

PARLIAMENT BUILDINGS.

In the vault under the main lobby, a system of wiring for telephones, bells and lighting was installed, the pipes covered with asbestos, and wiring was done for a large number of electric clocks. A system of plenum ventilation for the Hansard staff rooms connected with the Commons plenum system, but with a separate fan for use when that of the Commons system was not in use, was installed. For the House of Commons offices, a number of exhaust fans was supplied and all the bell connections therein were gone over and in places supplemented. In the Speaker's apartments, a new dressing room for ladies was formed; a wood-plastered partition, two of terra cotta, plastered, and one panelled partition were erected; a cement floor was put in at the bottom of elevator shafts; in the Commons, 28 rooms were cleaned, the walls and ceilings tinted, the woodwork painted and the floors treated and three rooms similarly renovated in the Senate; twelve new lavatory basins were put in for the House of Commons staff as also 3 sinks, 1 ice-box, 1 gas log, 2 radiators, 5 cluster light fixtures, 1 massage vibrator, 1 faucet, 10 new doors and frames, 4 new floors, 4 wire panel doors, 3 screen doors, 73 cupboards, 8 sets book shelves, 2 baize doors, 16 sets book shelves, 4 tables, 3 fire screens, 485 lineal feet shelving, 6 step-ladders, 20 rods and curtains, 100 newspaper racks, picture moulding in 9 rooms and 3 shower baths; repairs were made to 65 chairs, 8 sofas, 425 feet of shelving, ventilation, plastering, masonry, &c.; a large quantity of furniture was cleaned, painted or varnished including cupboards, double windows, doors, signs, hat racks, chairs, desks, tables, shelves, files and sofas; 231 lights of plain or fancy glass were glazed and all the corridors were touched up. At the Senate, 21 lights were reglazed and throughout the building the locks, ironmongery and brass work were repaired, cleaned, in part renewed and put in order.

Work done under the supervision of this department.

John Shearer, superintendent.

PARLIAMENT GROUNDS.

Some 935 lineal feet of the gravelled roadway 32 feet in breadth was paved with concrete foundation finished in asphalt and, owing to the new addition to the Parliament Buildings diverting the footpaths, 406 lineal feet, 8 feet broad, of footpath, similarly constructed, was laid. The aforesaid addition necessitated the removal of 300 yards of soil from the roadway and the regrading of 2,633 super. yards of lawn using a like number of yards of sodding; 1,800 trees and shrubs were planted along Lovers' Walk and 5 guns, captured by the Canadian Contingent during the last Boer war in South Africa, were set up in the rear of the Parliamentary Library.

49,000 bulbs were used in the spring display.

Work executed under the supervision of Jno. Shearer, superintendent.

T. Davis, gardener.

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POST OFFICE BUILDING.

An addition was made to the mail entrance and a new letter drop put in. The elevator was painted. Observation galleries were erected on ground and first floor; water filters and window awnings as well as a number of carpets and articles of furniture were supplied and some changes made in plumbing.

New stone steps were constructed at outside letter drops; at the foot of the elevator in basement, excavation was done and a brick wall demolished and rebuilt; a set of water closets was installed in the basement and 3 water closets and one lavatory basin in attic; a pump to raise water to the height of the attic closets was fitted up and connected in basement; a partition was built in the attic and two others in the basement; the floors of the ground floor were oiled 9 times during the year; painting was done in the Money Exchange and 39 lights of glass were glazed.

Work done under the supervision of the department.

J. Shearer, superintendent.

PRINTING BUREAU.

Five new offices were fitted up with lavatory basins, heating apparatus, lighting, bells, &c. The parliamentary room was painted and the office of the superintendent of printing as also the Franchise room were renovated. Fifty lights were glazed and there were supplied 2 new doors with frames, 12 chair cushions, 1 work bench with drawers and cupboards, 14 drop lights, 1 desk lamp, 10 3-light fixtures and 5 arc lamps.

Work supervised by this department.

John Shearer, superintendent.

REGAL BUILDING, O'CONNOR ST.

This is a rented building. The Labour Department was moved to this building from original quarters in the Molsons Bank Building, Metcalfe street, and from the G.N.W.T. Building, Sparks street. A quantity of new office furniture and special library and office fittings were supplied. A complete system of call bells was hung and 2 desk lamps, 2 drop lights, 4 3-light fixtures and 6 electric fans were installed. From the departmental workshop were supplied: 16 feet of counter with shelving, doors, &c.; 3 pine cupboards, 4 desks, 4 cloth doors, 8 rods and curtains and 64 lineal feet of partition. Repairs and alterations were effected to furniture, shelving, doors, windows and cupboards, and locks, keys, &c., supplied.

The D.O.C., No. 4, Canadian Militia, was removed from the Molsons Bank hereto and supplied with complete systems of lighting, telephones, bells, &c., as well as furniture, fittings and carpets.

The Insurance branch of the Finance Department was removed to the top flat of this building.

All under the supervision of this department.

John Shearer, superintendent.

REPAIRING STREETS, ETC.

The north side of Dufferin bridge was repaired.

Scraping, cleaning and general repairs were done to the various roadways, foot-paths and streets, under the control of the department. Rubbish, scrapings and ashes were removed from the East Block, West Block, Langevin Block, Parliament Buildings, Workshops, Post Office, Printing Bureau, Museum, Archives Building, Military Store building, the Mint, the several rented buildings and the various streets, and

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deposited at Nepean Point; the grass at Printing Bureau, about Cartier Square, Royal Mint, Wellington street, two bridges, Survey office, Fisheries Museum, Archives building and Geological Museum was kept clipped; manure was drawn on and removed therefrom, and the ashes removed from the boiler-houses and furnace-rooms of the various buildings; the roadways, sidewalks, footpaths, roofs and yards were kept clean of snow and the footpaths sanded during the winter.

Work done by the departmental staff.

Superintendent, John Shearer.

SEYBOLD BUILDING.

(Corner of Sparks and O'Connor Streets).

This is a rented building. The waste pipes were cleaned and the entrance doors, some partitions and the skylight were repainted. In the top flat for the Marine Department the rooms were cleaned, tinted and painted and were fitted up with a lavatory basin and 3 radiators.

Work done under the supervision of this department.

John Shearer, superintendent.

RESIDENCE FOR CHIEF ASTRONOMER.

The construction of this building, which is to be a two story brick building with a wooden roof and a concrete stone-faced basement, to be erected at the Central Experimental Farm, was contracted for on 25th February, 1909. Exclusive of verandah and a projection to contain cellar stairway, the building measures over all 47 feet by 41 feet 3 inches. The basement partitions are of brick and the floors in part cement, the remaining floors and partitions and the stairs and roof are of wood. The basement is to contain a childrens' play-room, a furnace and fuel room, a laundry, 2 store-rooms and a w.c. room; the ground floor, a dining room, a parlour, a study, a breakfast room, a kitchen and two pantries; the first floor 4 bedrooms, a sitting-room, a dressing-room, 2 bath rooms, a w.c. room and a stairway hall, and the attic 5 bedrooms, a bath-room, closets, &c. Hot water heating and electric lighting are to be installed.

Plans, &c., prepared and work supervised by this department.

Contractors for construction of the building, Doran & Devlin.

Contractor for heating apparatus, Martel & Langelier.

REFINERY BUILDING, ROYAL MINT.

This is a two story stone building situated within the Royal Mint inclosure a contract for the construction of which was entered into on the 7th September, 1909, and the constructive features of which are similar to those of the Main building. It measures 60 feet by 30 feet on plan and contains on the ground floor a melting room, a stronghold, an office, an entrance hall, a bath and lavatory room, a w.c. room, an elevator and a stairway; on the first floor are a silver cell room, a gold cell room, a laboratory, a rolling room, a gold dissolving room, a generator and switch-board room, an upper hall and a w.c. room. Heating is by steam.

Plans, &c., prepared and work supervised by this department.

Clerk of Works, J. Kennedy.

Contractor, John O'Leary.

ROYAL MINT.

Cesspools, chimneys, coal bins and fume closets were built; the gateway was paved with scoria blocks, and ventilators were put in.

Work done under the supervision of this department.

John Shearer, superintendent.

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SUPREME COURT BUILDING.

The ladies' lavatory and the dining room were cleaned throughout, tinted, painted and floors treated, there were a new closet and a slop sink fitted up. Vent pipes were fitted to 4 of the basin traps. From the workshop were supplied: 3 cupboards, 3 pigeon-hole cases, 2 screens, 2 tables and 25 lineal feet of shelving, a number of signs were written, repairs made to cupboards, desks, chairs, floors, windows and 18 lights were glazed.

TRAFALGAR BUILDING.

(Corner Bank and Queen Streets.)

Offices were rented in this building for the Accountants' Branch of the Interior Department, the Civil Service Commission and the Annuities Branch of the Trade and Commerce and thirteen rooms were tinted and the floors oiled. For the Civil Service Commission were supplied 1 desk, 1 book rack, 2 tables, 2 cupboards, 2 rods and curtains and a few cupboards and boxes were painted. Repairs were made to desks, tables, chairs, doors, windows, &c.; 17 lights were reglazed. The offices of the Under Secretary of State, External Affairs, was moved from the Eastern Block to offices in this building.

Work done under the supervision of this department.

John Shearer, superintendent.

WESTERN BLOCK.

The Public Works Record rooms on the first floor, three in number, were formed into one room by the removal of the intervening partitions, one of which passed up through the attic to the roof and included a large chimney, this involving the supporting of the floors of the attic rooms over on steel girders and making good plastering, &c. New furniture and fittings were supplied throughout.

Thirty rooms were cleaned, tinted and painted and the floors treated—13 in the Public Works Department, 11 in the Customs Department, 6 in the Inland Revenue Department and 2 in the Marine Department together with 766 yards of tinting and 50 yards of painting in corridors. In the Inland Revenue Department, a cupboard with gas, and water connections was removed and a table with gas, water and drainage substituted; 18 hardwood floors were laid—6 for the Inland Revenue Department, 4 for the Marine Department, 3 each for the Public Works Department and the Customs Department and 2 for the Trade and Commerce Department; 37 new windows and frames were put in—6 for the Marine Department, 5 for the Public Works Department, 3 for the Inland Revenue Department, 2 for the Mounted Police Department and 21 for the Customs Department. A telephone bell was hung for the Inland Revenue Department; 22 rods and curtains were supplied, 6 each to Railways and Canals Department and Inland Revenue Department; 5 each to Marine Department and Customs Department; 7 cloth covered doors were hung, 3 for the Inland Revenue Department and 2 each for the Railways and Canals Department and the Marine Department; 31 tables were supplied—13 for the Marine Department, 5 for the Public Works Department, 11 for the Inland Revenue Department, 6 for the Railways & Canals Department and 7 for the Railway Commission; packing cases were supplied—172 for the Customs, 26 for the Marine Department, 38 for the Trade and Commerce Department, 16 for the Railways and Canals and 6 for the Railway Commission; 44 cupboards were supplied, 10 to the Customs Department, 7 to the Railways and Canals, 24 to the Public Works Department and 3 for the Marine Department; shelving was supplied—135 lineal feet to the Customs Department, 137 for the Trade and Commerce Department, 40 lineal feet to the Inland Revenue Department and 50 lineal feet to the Marine Department; 2 glazed partitions

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with doors were erected in the Customs Department, 20 feet of partition in the Marine Department, 35 feet in the Public Works Department, 80 feet in the Trade and Commerce Department and 15 feet in the Railway Commission offices; 6 step-ladders were supplied—3 each to the Customs Department and Railway Commission offices; 3 pigeon-hole cases and 4 chart cases were supplied the Marine Department; wash basins were supplied and connected, 2 each in the Public Works Department, Railways & Canals Department and the Mounted Police Department, and 1 in the Inland Revenue Department; the Public Works Department was furnished 1 electric pump, 1 gas log, 1 dumb-waiter and 3 fire screens; 5 window deflectors and a skylight were fitted up; 3 rooms were picture moulded and 150 signs were written for the Customs Department; 125 drop lights were installed, 17 for Public Works Department, 12 for Mounted Police Department, 21 for Inland Revenue Department, 12 for Customs Department, 63 for Marine Department, and 9 for Railways and Canals Department; desk lamps were supplied—6 for the Customs Department, 7 for the Marine Department, 5 for the Railways and Canals Department and 2 for the Public Works Department; 26 sets of map-rollers and 8 stools were supplied to the Public Works Department which had also 3 telephone extensions made; 1 water closet and 3 ventilators were supplied to the Railways and Canals Department; 21, 2-3-4 and 5-light fixtures were supplied—1 to the Mounted Police Department, 2 to the Trade and Commerce Department, 5 to the Railways and Canals Department, 3 to the Customs Department, 8 to the Public Works Department and 2 to the Inland Revenue Department; desks were supplied, 12 to the Inland Revenue Department, 9 to the Customs Department and 2 to the Trade & Commerce Department; fans were supplied, 9 to the Marine Department, 4 to the Public Works Department and 1 to the Railway Commission offices; 30 tungsten lamps were provided for the Public Works Department, 5 for the Marine Department, 7 for the Trade & Commerce Department, 2 for the Railway Commission offices and 18 for the Inland Revenue Department; 7 radiators were supplied the Customs Department, 2 the Inland Revenue Department, 2 the Public Works Department and 1 the Marine Department; 3 storm sashes, 3 ventilators, 4 doors and 4 chair cushions were supplied to the Marine Department; a fire screen was supplied to the Mounted Police Department; 1 chest to the Trade and Commerce Department and 3 fan-lights to the Railway Commission offices. A large number of signs were written for the various departments and lights glazed for all. Furniture was repaired and revarnished in all the departments. A quantity of linoleum was laid in the corridors; the iron crests of the roof were painted, and a large number of changes and additions were made to the telephone, light and bell services.

There were also repairs to a large number of articles of furniture, as also minor jobs of painting, lettering and of joinery. The roofs, roads and footpaths were kept free from snow. The winter sashes and summer blinds were cleaned, put on, taken off and stored periodically.

Work done under the supervision of this department.

Superintendent, John Shearer.

BUILDINGS AND GROUNDS GENERALLY.

In addition to the works mentioned in the foregoing, there are innumerable smaller works, i.e., there are items of repair done by the roofers, the masons, plumbers and other trades; items taking each a number of days' work of a tradesman, besides material to accomplish. Besides all these, in connection with the various other buildings, the property of the government, there are similar works of repair, painting, furnishing, tinting, &c., in connection with a number of rented buildings; also such works as repairs to and renewals of coal and other sheds, as well as works of a general character, such as the erection and taking down and storing of porches, winter boarding outside steps, &c., &c., all of which are done by the departmental staff.

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PARKHILL.

PUBLIC BUILDING.

This building, which was described in last year's report, is still in progress of construction.

Plans and specifications prepared by this department.

Clerk of works, James Phelan.

Contractors, W. J. Leslie and W. A. Macheill.

Contractors for lighting, The Commercial Electric Co.

Contractors for heating, Macdonald & Curtis.

PETERBOROUGH.

DRILL HALL.

This building, which was described in a previous report, is completed.

PETROLEA.

PUBLIC BUILDING.

A new bath-room with hot water boiler connections and extension of drain was provided, under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

SARNIA.

PUBLIC BUILDING.

The interior was painted; shelves were fitted up in the Custom House, six new window shades were provided and a sidewalk was laid—under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

ST. CATHARINES.

PUBLIC BUILDING.

New lavatories were fitted up in the customs postal office examining warehouse; some new awnings and fly screens were supplied as also some new roof cresting; the caretaker's quarters were papered, and some minor repairs made throughout the building, all under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

ST. MARY'S.

PUBLIC BUILDING.

Alterations of box screen was made and some new shutters supplied, under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

ST. THOMAS.

PUBLIC BUILDING.

Carpentry and ironwork of this building were cleaned and painted outside and inside and the walls and ceilings cleaned and kalsomined excepting two rooms in caretaker's apartments which were papered; the stonework was repointed; the fence and the cement sidewalk were rebuilt; the roadway was regravelled, and a new letter plate supplied the post office, all under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

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STRATFORD.

PUBLIC BUILDING.

The interior was repapered, repainted, &c.; new window shades were supplied the post office and custom house; the entrance doors were cleaned, and repairs were effected to plumbing, carpentry, joinery, glazing, ironmongery, &c., all under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

SIMCOE.

PUBLIC BUILDING.

This building is completed and occupied.

STRATHROY.

COMPANY ARMOURY.

This building, which was described in a previous report, is completed.

TORONTO.

* ASTRONOMICAL OBSERVATORY.

This building, which was described in a previous report, is completed.

CUSTOM HOUSE.

There were supplied 2 desks, 1 cabinet, 2 sectional book cases (12 pieces) and one chair, under the supervision of Thos. H. Hastings, Clerk of Works, Toronto.

EXAMINING WAREHOUSE.

No. 3 elevator had the weights changed and extensive alterations made to it, under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

MAGAZINE AT OLD FORT YORK.

This building, which was described in my last year's report, is completed.

Plans and specification prepared by this department.

Work supervised by Thos. H. Hastings, Clerk of Works, Toronto.

Contractors, A. C. Baker and Andre Joodahl.

POST OFFICE.

Three oscillating fans were installed; 8 parcel receptacles were made for Postal Customs branch; 24 standard oak cases for M.O. advices were supplied, 2 ash cases for mail delivery, counter for Postal Customs branch, 65 iron case slides for Registry branch; one gun cabinet, one dust proof cabinet, one plain cabinet, two oak cases, two ash cases, two slip cupboards and storeroom fittings; three tables were altered, and repairs were made to fittings, furniture, brass work, glazing, ironmongery, &c.

Work supervised by Thos. H. Hastings, Clerk of Works, Toronto, Ont.

INLAND REVENUE AND ASSISTANT RECEIVER GENERAL'S OFFICE,

Dolomant floors were laid in the halls and corridors, some furniture was supplied and some minor usual and ordinary repairs effected, all under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

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METEOROLOGICAL BUILDING.

Six oak tables, a cupboard, a cabinet, a number of chairs, some rugs and a fire set were supplied, under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

POSTAL STATION 'C.'

The caretaker's quarters were painted and papered, under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

POSTAL STATION 'D' (West Toronto).

Roadway, sidewalk with curb and iron fence were laid and erected and soil provided for top dressing grounds, all under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

POSTAL STATION 'E.'

A safe was supplied and new fittings put in, under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

POSTAL STATION 'F.'

A stamp vendor's compartment with brass wicket was installed, the brass grille was removed from the registration branch and a glass frame fitted in. Work supervised by Thos. H. Hastings, Clerk of Works, Toronto, Ont.

POST OFFICE.

Alterations and Additions.

These consist of an addition, partly two stories and partly one, along the east side to the north front 32 feet broad by 156 feet long and an additional story over the one story portion of the north front 68 feet long by a depth of 80 feet. The addition on the eastern side has 55 feet of the south end two stories as well as 29 feet of the north end. These additions are of similar material, heights of stories and architectural treatment with the adjoining work. The basement throughout is continuous with and undivided from the ground floor of the original building. The new upper story of the north front is undivided; the upper story at the southern end of the eastern addition is divided into two rooms and that at the north end is divided into a lunch room and a lavatory.

Plans, &c., prepared by this department.

WALKERTON.

PUBLIC BUILDING.

Some rooms in the caretaker's quarters were papered; oil cloth was laid in post office, and some repairs and alterations of fittings, furniture and ironmongery made, under the supervision of Thos. H. Hastings, Clerk of Works, Toronto.

WELLAND.

PUBLIC BUILDING.

This building, which was described in last year's report, is still in progress of construction.

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Plans and specification prepared by this department.
Clerks of works, Edgar Rounds.
Contractors, Nagle and Mills.
Contractor for lighting, H. J. Breay.
Contractor for heating, S. P. Gourlay.

WHITBY.

PUBLIC BUILDING.

This building, which was described in my last year's report, is yet in progress.
Plans and specification prepared by this department.
Clerk of works, W. H. Bradshaw.
Contractors, H. Gay & Sons.
Contractor for lighting, W. J. Trick.
Contractors for heating, Martel & Langelier.

WINDSOR.

PUBLIC BUILDING.

The metal roof covering was thoroughly repaired; the newspaper and letter boxes and posts were repainted; a portion of the interior was painted, and minor repairs made to furniture, &c., under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

WOODSTOCK.

PUBLIC BUILDING.

Alterations of and additions to P. O. screen were effected and repairs were made to boiler smoke pipe, &c.

Work done under the supervision of Thos. H. Hastings, Clerk of Works, Toronto, Ont.

PROVINCE OF MANITOBA.

BRANDON.

PUBLIC BUILDING.

A new hardwood floor was laid on the ground floor and some alterations made to the post office box screen, under the supervision of Jos. Greenfield, resident superintendent, Winnipeg, Man.

DAUPHIN.

POST OFFICE, LANDS OFFICES AND CUSTOMS OFFICE.

This building, which was described in my last annual report, was completed during the fiscal year.

In addition, it was found necessary to furnish a new well, outside closets and drainage for roof water.

Plans and specifications prepared by this department.

Clerk of Works, W. Bessons.

Contractor, S. Brown.

Contractors for fittings, Oshawa Furniture Company.

Contractors for lighting, City of Dauphin.

EMERSON.

PUBLIC BUILDING.

This building, which was described in my last annual report, is still in progress of construction.

Plans and specifications prepared by this department.

Clerk of Works, F. Smith.

Contractor, S. Brown.

Contractors for fittings, Oshawa Interior Fittings Company.

NEEPAWA.

PUBLIC BUILDING.

This building is completed and occupied.

PORTAGE LA PRAIRIE.

PUBLIC BUILDING.

The exterior was painted and repairs were made to floors, &c.

Work supervised by Jos. Greenfield, resident superintendent, Winnipeg, Man.

WINNIPEG.

FORT OSBORNE BARRACKS.

GUARD ROOM, OFFICES AND STORES BUILDING.

This building, which was described in my last year's report, is completed, wired for lighting, fitted for hot water heating and furnished with steel and other fittings, furniture, &c.

QUARTERS FOR MARRIED MEN.

Necessary window shades, storm doors and fanlights were supplied, as also fences and cement footpaths, under the supervision of Jos. Greenfield, resident superintendent, Winnipeg, Man.

NEW EXAMINING WAREHOUSE.

It is expected that this building, which was described in a previous report, will be completed at an early date.

WINNIPEG.

IMMIGRATION BUILDING NO. 1.

The building was repainted throughout and repairs were made to plumbing, chimneys and roof; all under the supervision of Jos. Greenfield, resident superintendent, Winnipeg, Man.

OLD EXAMINING WAREHOUSE.

Repairs were made to plumbing, heating, carpentry, &c., under the supervision of Jos. Greenfield, resident superintendent, Winnipeg, Man.

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WINNIPEG.

CUSTOM HOUSE.

Repairs were made to plumbing, joinery and furniture.

Office furniture was supplied to the Appraiser's office and also to the Customs parcels office, under the supervision of Jos. Greenfield, resident superintendent, Winnipeg, Man.

LANDS OFFICE.

A new fireproof safe was supplied, under the supervision of Jos. Greenfield, resident superintendent, Winnipeg, Man.

PROVINCE OF SASKATCHEWAN

ESTEVAN.

PUBLIC BUILDING.

This building, which was described in my last annual report, is still in progress of construction.

Plans, &c., prepared by this department.

Clerk of Works, G. F. Faulkner.

Contractors, Snyder Brothers.

Contractors for lighting, N. W. Electric Company.

Contractors for heating, Winnipeg Light, Heat and Power Company.

INDIAN HEAD.

FORESTRY FARM.

The seed drying house was painted and three sections of filing cases for papers supplied.

Works supervised by W. S. Mollard, Clerk of Works, Sask., and Alta., Regina.

PRINCE ALBERT.

SASKATCHEWAN PENITENTIARY WORKSHOPS.

A contract for the construction and completion of this building, inclusive of the heating and electric lighting systems, was entered into on September 7, 1909.

The building consists of a main portion having three stories and basement with a frontage of 35 feet 7 inches by a depth of 48 feet, together with two lateral wings each 40 feet in depth by 120 feet in length, and two stories in height. One wing devoted to workshops, and the other, three stories of 44 cells each, excepting 36 feet in length at the proximal end, which is a kitchen on the ground floor and a chapel on the first floor. The main portion has a basement divided into boiler room, fuel room and root cellar; a ground floor divided in vestibule, mail hall and deputy warden's office, and a first floor for the hospital, surgery, &c. The walls and partitions are brick concrete lined on concrete foundation walls, and the remaining construction materials principally wood.

Plans, &c., prepared by this department.

Clerk of Works, F. W. Dickenson.

Contractors, The Saskatchewan Building Construction Company.

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REGINA.

SEED AND GRAIN DISTRIBUTION OFFICE.

A number of rooms were rented and furnished for these services, under the supervision of W. S. Mollard, Clerk of Works, Sask., and Alta., Regina.

IMMIGRATION HALL.

A new site consisting of lots 22 and 23 in block 248, St. Johns street, Regina, was purchased and the building was removed from the former site, on Canadian Pacific Railway right of way on Broad and South Railway streets, which had been held under lease. A cellar was excavated and the building raised on a stone foundation, the cellar and summer kitchen concrete floored and plastered, the stairways and chimney continued down to the cellar, a hot air heating system was installed and the entire building, as also the sheds and outhouses were painted and kalsomined; all under the supervision of W. S. Mollard, Clerk of Works, Saskatchewan and Alberta, Regina, Sask.

LANDS OFFICE.

The grounds were levelled; some painting and kalsomining were done; a fence was constructed and concrete steps were made at entrance; all under the supervision of W. S. Mollard, Clerk of Works, Saskatchewan and Alberta, Regina, Sask.

GENERALLY.

The Dominion buildings were decorated on the occasion of the laying the corner stone of the Saskatchewan Parliament Buildings; 35 street letter boxes were repainted.

Work supervised by W. S. Mollard, Clerk of Works, Saskatchewan and Alberta, Regina.

PROVINCE OF ALBERTA.

EDMONTON.

PUBLIC BUILDING.

This building, which was described in a previous report, is complete and fitted up with office fittings, furniture, elevator, electric lighting, hot water heating and tower clock.

MOOSEJAW.

PUBLIC BUILDING.

The building was cleaned, tinted and painted, and furniture was supplied for the Lands Office; all under the supervision of W. S. Mollard, Clerk of Works, Saskatchewan and Alberta, Regina, Sask.

IMMIGRATION BUILDING.

Two stoves and a number of articles of furniture were provided, under the supervision of W. S. Mollard, Clerk of Works, Saskatchewan and Alberta, Regina, Sask.

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SASKATOON.

LANDS OFFICE.

A counter with gates, &c., a quantity of shelving, a cabinet, a clock, linoleum and window shades were supplied, under the supervision of W. S. Mollard, Clerk of Works, Saskatchewan and Alberta, Regina.

YORKTON.

POST OFFICE, LANDS OFFICE AND CUSTOMS OFFICE.

The building was described in my last annual report.

Plans and specifications prepared by this department.

Clerk of works, J. W. Christie.

Contractor, S. Brown.

Contractors for lighting, MacCallum & Co.

Contractors for heating, Cotter Bros.

PROVINCE OF BRITISH COLUMBIA.

FERNIE.

PUBLIC BUILDING.

This building, which was previously described, was destroyed by fire on August 1, 1908, and is now reconstructed and occupied.

NANAIMO.

PUBLIC BUILDING.

Partitions in old telegraph office and examining warehouse were removed; blinds were supplied the government telegraph office; a brass letter receiver was installed and repairs were made to slate roof gutter, flat roof, electric wiring, plumbing, gas fitting, carpentry, &c. The street letter boxes were painted. All supervised by Wm. Henderson, resident architect, Victoria, B.C.

NEW WESTMINSTER.

PUBLIC BUILDING.

Steel filing cabinets were supplied for Public Works office and Crown Timber and Lands office; the fire escapes, flagpole and iron fence were cleaned and repainted; the Crown Timber office was cleaned and painted; furniture was supplied to a number of offices; some fixtures were altered and repairs were made to heating, plumbing, &c.; all under the supervision of Wm. Henderson, resident architect, Victoria, B.C.

INDIAN AND FISHERIES BUILDING.

A ladder was supplied, an addition was made to chimneys and repairs were made to plumbing and clock, all under the supervision of Wm. Henderson, resident architect, Victoria, B.C.

NELSON.

PUBLIC BUILDING.

A stone driveway was laid to yard; a cast iron drain constructed under sidewalk; a concrete sidewalk laid; a maple floor laid in post office; walls and ceilings of hall

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and staircase painted; the street letter boxes repaired and painted; window shades supplied; some walls and ceilings were painted and repairs effected to floors and door; all under the supervision of Wm. Henderson, resident architect, Victoria, B.C.

ROSSLAND.

PUBLIC BUILDING.

The caretaker's quarters were kalsomined, the porch, entrance and mail entrance shed were painted and some repairs were made to plumbing, under the supervision of Wm. Henderson, resident architect, Victoria.

VANCOUVER.

NEW PUBLIC BUILDING.

This building, which was described in a previous report, is completed; fitted with hot water heating, electric light wiring, striking tower clock, office fittings, furniture, &c.

ORIGINAL PUBLIC BUILDING.

A new sewer was laid on Granville street and the building connected therewith; the street letter boxes were painted; five desks, six sorting cases, five pigeon-hole cases, four stools and two sets of furnace grates were supplied. Repairs were made to alley pavement, footpaths, street boxes and p.o. locks; a skylight was reglazed, the flag-pole was repainted and four boards, two doors and a wicket were lettered, a number of signs painted, some carpets supplied and some cleaning done to walls and ceilings; all under the supervision of Wm. Henderson, resident architect, Victoria, B.C.

VICTORIA.

IMMIGRATION HOSPITAL.

This building, which was described in a previous report, is completed.

MARINE BUILDING (Old Custom House).

The wire fence from street to wharf was rebuilt; a room for surveyor was partitioned off the Indian office; vault fittings, blackboards, desks, cabinets, chairs, stools and a washstand were supplied and a new skylight put in roof. Repairs were made to roof, heating apparatus, &c.; all under the supervision of Wm. Henderson, resident architect, Victoria, B.C.

OLD POST OFFICE BUILDING.

The flooring on first floor was renewed and closets in courtyard were refloored in concrete and reroofed; all under the supervision of Wm. Henderson, resident architect, Victoria, B.C.

PUBLIC BUILDING.

The contract for addition which was referred to in last year's report is completed and the heating, lighting and water services extended thereto and furniture and fittings supplied.

The street letter boxes were repainted; a filter was supplied to P.O. Inspector's office; partition between postal parcels department are taken down and rebuilt and

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the fixtures in old room moved to new office; a new safe was supplied as well as office chairs, cushions, carpets, pigeonhole cases, blinds, desks, notice board, hat and coat rails, tables, and additional lengths of counter.

Work done under the supervision of Wm. Henderson, resident architect, Victoria, B.C.

WILLIAMS HEAD.

QUARANTINE STATION.

The exterior, including roofs and window and door screens of the laboratory, superintendent's stable and work-shed, tank house, Japanese and Chinese buildings, two w.c. buildings, ice-house, water-house, cook house and store-houses, were painted two coats, as also the interiors, walls and ceilings of the first-class detention building, main hospital, superintendent's kitchen, pantry and bedroom, caretaker's residence and captain's residence. A concrete foundation was constructed under Captain's residence; the laundry chimney was taken down and rebuilt; a new disinfection retort was installed; the tank in Chinese building was taken down and rebuilt; a new sulphur dioxide blast and a new steam disinfection chamber were installed; a formaldehyde regenerator was installed and connected with disinfection chamber and two wash basins were supplied. In connection with the foregoing installations, steam pipes, return pipes, water supply pipes and vacuum exhaust pipe connections with valves were made, covered, painted, &c.; drains were extended and altered; sewers were repaired, enlarged and extended; situation of pump was altered; rails were relaid; sheaves, brackets and beams supplied, and counter weights refilled. Two smoke stacks and three flagpoles were painted and repairs were made to roofs, carpentry generally, locks, hinges, gutters and plumbing.

Work done under the supervision of Wm. Henderson, resident architect, Victoria.

YUKON TERRITORY.

PUBLIC BUILDINGS.

General repairs and maintenance of the various public buildings throughout the territory were effected, under the supervision of S. A. Bertrand, superintendent of public buildings, Yukon Territory.

LIST OF YUKON PUBLIC BUILDINGS.

- Dawson, Administration Building.
- Dawson, Government House (Commissioner's residence).
- Dawson, Post Office.
- Dawson, Court House.
- Dawson, Government Warehouse.
- Duncan Creek, Mining Records Office (rented).
- Glacier Creek, Mining Records Office.
- Carcross, Mining Records Office (rented).
- Kluhane, Mining Record office.
- Indian River District (rented).

PART IV

CHIEF ENGINEER'S REPORT

ON

HARBOUR AND RIVER WORKS

INCLUSIVE OF

GRAVING DOCKS AND DREDGING OPERATIONS

ALSO

ROADS, BRIDGES AND SURVEYS THROUGHOUT THE DOMINION.

REPORT OF THE CHIEF ENGINEER.

DEPARTMENT OF PUBLIC WORKS OF CANADA.

CHIEF ENGINEER'S OFFICE,

OTTAWA, July 25, 1910.

R. C. DESROCHERS, Esq.,

Assistant Secretary,

Department of Public Works.

SIR.—I have the honour to submit the annual report on the various works under my charge during the fiscal year ended March 31, 1910.

These works comprise the construction and repair of wharfs, piers, breakwaters, dams, weirs, bank and beach protection works; the improvement of harbours and rivers by dredging; the construction, maintenance and operation of government dredging plant; the construction and maintenance of graving docks; the construction, maintenance and working of slides and booms; the construction and maintenance of interprovincial bridges and approaches thereto, and of bridges on highways of federal importance in the Northwest Territories and the maintenance of military roads; also hydrographic and ordinary surveys and examinations, inclusive of precision levelling and geodetic measurements which are required for the preparation of plans, reports and estimates; the testing of cements, &c.

I have the honour to be, sir,

Your obedient servant,

EUG. D. LAFLEUR.

Chief Engineer.

PROVINCE OF NOVA SCOTIA.

ABERCROMBIE POINT.

Abercrombie Point, Pictou county, is on the south side of Pictou harbour, between the entrances of the East and Middle rivers, and nearly opposite the town of Pictou.

A wharf, built by the harbour commissioners in 1888, and repaired by the department in 1891-2 (originally a block and span structure 20 feet in width, with a T head, extending 505 feet to four feet at extreme low water on flats dry at low water to within 170 feet of the outer end), consisted, when its reconstruction was undertaken, in 1908-9, of an approach of brush and stone 77 feet in length and the remains of 13 cribwork blocks of which two were in the T head.

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Spring tides rise 6 feet, neaps 4 feet.

In 1908-9, the sum of \$1,831.41 was expended in procuring all the native timber and iron required for reconstructing the block and span work with the exception of the floor-stringers and covering, and in reconstructing the four inner blocks from ground level.

During the fiscal year 1909-10, the sum of \$5,714.56. was expended, \$2,815.45 in procuring the creosoted timber which was paid for out of the appropriation for 'creosoted timber,' and \$2,899.13 in reconstructing the nine outer blocks (two from three feet above extreme low water, four from ground level, and three at outer end, from two feet below extreme low water), in placing new floor-stringers, covering and guard rails over the whole of the block and span work, and in repairing the approach at its junction with the inner block.

Work was in progress April 7, to 30. June 1 to July 8, July 23 to August 28, September 7 to 14, and October 4 to 12.

Total expenditure by department to March 31, 1910, \$8,410.19.

ANDERSON'S COVE.

Anderson's cove, Annapolis county, is a scarcely perceptible indentation in the coast line, on the south side of the Bay of Fundy, 16 miles east of Digby Gut, 2 miles east of Litchfield, and two miles west of Parker's cove. The settlement which is called Hillsburn, comprises, within the radius of a mile, about 150 people, dependent almost exclusively on the fisheries for a living.

In order to afford some measure of protection and shelter for the boats, which are often broken or destroyed for lack of shelter, the department in 1905-6, expended the sum of \$1,813.29 in constructing a small breakwater, 162 feet long, from 7 to 13 feet high, and 26 feet wide. In 1906-7, the sum of \$1,000 was expended in extending the work by a substantial block of cribwork, 50 feet long, 26 feet wide and from 12 to 15 feet high.

In 1908-9, the sum of \$2,998.57 was expended in extending the breakwater a further length of 100 feet, but owing to the lateness of the season at which the work was begun, September 19, 1909, and closed down on account of stormy weather. November 30, 1909, it was not completed within the fiscal year.

In 1909-10, the sum of \$999.97 was expended in completing it. The extension is 100 feet long, 26 feet wide and from 15 to 18 feet high, substantially built of round log cribwork, filled with ballast.

Spring tides rise about 28 feet.

Work begun June 21, and finished August 30, 1909.

ANNAPOLIS.

Annapolis Royal, Annapolis county, is the oldest town in the province of Nova Scotia, having been founded in 1605. It is beautifully situated at the head of Annapolis basin and on the south side of the Annapolis river. It has a population of about 2,000 and is the centre of one of the most fertile districts of Nova Scotia.

On the water front of the town, there had not been for many years a public wharf or landing place. The Queen's wharf, so-called, at the west end of the town, is supposed to have been first constructed during the French occupation in the 17th century. About 1868 it was repaired and extended, and made serviceable for the accommodation of the steamer which plied between Annapolis, Digby and St. John, N.B. before the construction of the railway from Annapolis to Yarmouth. Both the original construction and the extension were in cribwork.

The wharf being for many years a complete wreck, and to a certain extent a danger to navigation, the department in 1905-6-7-8 expended the sum of \$9,346.22 (1905-6, \$3,885.75; 1906-7, \$4,078.70; 1907-8, \$1,381.77) in building a new pier on the

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site of the old one. It consists of an approach of earth and stone, walled on each side, 250 feet long, 30 feet wide, and of an average height of 8 feet, followed by a pile-work structure 240 feet long by 30 feet wide with a T on the outer end 90 feet long, on the face by 40 feet wide. The bearing piles in the T are creosoted. Along its face the work is 37 feet high, with 33 feet of water at H. W. O. S. T., and about 6 feet at low tide. Springs rise about 27 feet. On the north side of the stem, next to the T, is a flight of steps and a level platform or landing for the accommodation of small craft, and in the middle of the length of the floor is a lifting slip operated by a powerful double hand-winch, for the convenience of steamers.

In 1909-10, the sum of \$60 was expended in removing a number of boulders from the steamer-berth along the outer face of the pier, by means of a clam-shell dredge, forming part of the plant of the contractors for the ice-piers.

Ice-piers.

In 1907-8, the department expended \$12,942.59 in the purchase and delivery of creosoted timber for the purpose of constructing these piers in the river, about a quarter of a mile above the town wharfs, with the object of protecting shipping from floating ice.

Early in 1908, a contract was awarded by the department for their construction, but the contractors refusing to proceed with the work, new tenders were asked for early in 1909, and on May 18, 1909, a contract was signed by the Nova Scotia Construction Company, of Sydney, N.S., in the sum of \$46,736. Work was begun early in June, 1909, and when the work was closed for the season, about the end of December, 1909, on account of cold and stormy weather, the three cribs were in place and ballasted, the concrete top on pier No. 2 was complete within one foot of the top, and the riprap around the bases of piers 2 and 3 was nearly finished, the value of work done up to January 1, 1910, being \$27,090.

ARGYLE HEAD.

Argyle Head, Yarmouth county, is a thrifty, agricultural community of some 200 or 300 people, situated at the head of Argyle harbour, about 15 miles south of the town of Yarmouth.

For the convenience of the inhabitants, the department in 1908-9, built a little stone wharf at a cost of \$800. The work, which is of dry, uncoursed rubble masonry, is 150 feet long, 25 feet wide, and from 16 to 10 feet high, with fenders and guard-timbers.

In 1909-10, the sum of \$99.90 was expended in completing the work by covering the top with gravel and in placing some fenders omitted last year.

Spring tides rise 13 feet.

Work begun November 3, finished November 10, 1909.

ARISAIG HARBOUR.

Arisaig, Antigonish county, is on the southeastern shore of Northumberland strait, about 15 miles southeast from Cape George.

The works at this place include a pier on the northern and a breakwater on the southern side of a small cove.

The pier, commenced by the provincial government prior to confederation and extended and improved by the department, is 544 feet in length, including an approach 272 feet in length, of which the inner 117 feet is of brush and stone, and the outer 155 feet of stone, with stone retaining walls, protected on both sides by a stone talus, and a crib-work extension 272 feet in length, and from 40 to 44 feet in width, strengthened and protected on the seaward side by a 24 x 24-foot cribwork block, at

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the outer end, and by quarried stone sloping three to one from high water level. The depth, at extreme low water, at the outer end is 11 feet.

Spring tides rise 5 feet.

The breakwater, constructed in 1887-8, and partially reconstructed in 1905-6 and 1906-7, is 380 feet in length, including an approach of stone with stone retaining walls 80 feet in length; cribwork of native timber 260 feet in length and 20 feet in width, and a cribwork block with creosoted substructure, 28 feet in line of work by 30 feet, connected with the outer end of the native timber cribwork by a 20-foot span. The depth at extreme low water at the outer end is 5 feet.

During the fiscal year 1909-10, the sum of \$1,099.74 was expended in repairing and strengthening the pier, including reconstructing, above low water, a portion of the seaward face, near the outer end, 40 feet in length and 12 feet in width, and replacing the quarried stone talus over a length of 80 feet from the outer end, and in re-ballasting a bay at the southwest corner. Work was commenced June 19 and completed October 16.

Total expenditure on works at Arasaig up to March 31, 1910, including a refund of \$541.41 to the provincial government, \$44,899.15.

AVONPORT.

Avonport, Kings county, is a small farming village with a population of about 250, situated at the mouth of the Avon river, at this point nearly two miles wide, and on the Dominion Atlantic railway, 12 miles northwest from Windsor, the county town of Hants. Some two or three millions of bricks are made here during the year.

A small wharf of ordinary round-log stone-filled cribwork was built before confederation by the inhabitants, aided by the provincial government. It is 300 feet long, 23 to 25 feet wide on top, and 17 feet high at the outer end, which is dry at L.W.O. S.T.

In 1886, the department, having assumed control of the wharf some little time previously, spent \$1,200 in general repairs.

Since that date, numerous small expenditures have been made by the department in repairs and renewals, of which particulars will be found in the departmental report for 1908-9.

In 1909-10, the sum of \$1,999.66 was expended in taking down and rebuilding a portion of the shoreward end of the wharf, 64 feet long, 10 to 20 feet wide, and 6 to 18 feet high. The approach was also rebuilt.

Spring tides rise over 40 feet.

Work begun June 28, finished November 10, 1909.

BADDECK.

Baddeck, the shiretown of Victoria county, is on the northern shore of the Little Bras d'Or lake, near the entrance to St. Patrick's channel.

During 1907-8, a wharf, 284 feet in length and extending to 18 feet at low lake level, was constructed by the department. It consists of a road approach 64 feet in length and 30 feet in width, of cribwork with creosoted timber structure, 50 feet long and 48 feet wide, and of a creosoted timber pile extension, 170 feet long and 40 feet wide; with two boat landing stages, respectively 32 and 64 feet in length and 8 feet wide, one on either side of the inner end of the wharf, and built on creosoted timber pile foundations.

The top of the wharf is 5 feet above the low level of the lake, which rises about 15 inches.

In 1908-9, the sum of \$2,683.73 was expended in draining, raising, levelling up and in fencing in the wharf property; in general repairs to an old warehouse on the eastern side of the approach to the wharf; in fitting it up for office, waiting-room

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and baggage room, and in procuring part of materials for, and in framing and boarding in of a new freight shed on the wharf, 48 x 34 feet.

Out of the amount voted for 1909-10, viz: \$1,500, the sum of \$1,499.84 was expended in completing and painting the new freight shed, in building a chimney in and painting the old warehouse, and in constructing a cribwork retaining wall around the harbour front of the wharf property, up to within 12 inches of the intended height.

The cribwork wall is 172 feet long, 8 feet wide on top, and of an average height of 5 feet, and is built of round timber with creosoted substructure and is fully ballasted.

Work was done between June 17 and July 31, and between October 16 and January 15, 1910.

BAY ST. LAWRENCE.

Bay St. Lawrence, Victoria county, is on the northern extremity of the island of Cape Breton, and lies between Cape North and Black point.

At the head of the bay and separated from it by a beach of sand, gravel and stone, there is a small lake, $\frac{3}{4}$ of a mile in length, and $\frac{1}{2}$ a mile in width, with a considerable depth of water.

In order to render the pond accessible to fishing boats for a harbour, during 1908-9 a contract was entered into for the cutting of a channel through the beach, to two feet below low water and 50 feet wide at the bottom; the construction of channel protection piers on each side of the seaward entrance to the channel, each 290 feet in length, and extending to 8 feet at low water, and consisting of cribwork of which the outer 140 feet have creosoted timber sub-structures; and of the work under contract, up to the end of that year, the piers were fully completed, and about one-half of the proposed excavation of channel was done.

Spring tides rise 4 feet; neaps, 3 feet.

During the year 1909-10, the inner end of the western pier, which had settled, was raised up to the original height and extended inwards for a distance of 30 feet, under contract, for the sum of \$700. The work was commenced on September 15 and completed on October 21, 1909.

BIG BRAS D'OR.

Big Bras d'Or, Victoria county, is a settlement on the southern side of the channel of the same name, near its entrance into the Atlantic.

The wharf, completed during 1888-9, is a block and span structure, 150 feet long and 20 feet wide, with an 'L' on the eastern side of the outer end, 40 x 20 feet, giving a channel frontage of 60 feet. It is constructed entirely of native timber and has a depth of 11 feet at low water, along its channel face.

Spring tides rise 3 feet; neaps, 2 feet.

During 1900-1-2, the close-piling around the outer block, which had been completely destroyed by the teredo below the line of low water, and portions of the covering and cap-timbers, which were worn and decayed, were renewed.

Out of the amount voted for expenditure during 1909-10, viz: \$2,000, the sum of \$1,911.13 was expended in the renewal of all floor-stringers, covering the cap, and for procuring the creosoted timber required for close-piling the outer block and for fenders around the inside blocks, and in placing 20 of the creosoted timber piles on the outer end face of wharf.

Total expenditure to March 31, 1910 is \$6,379.35.

Work was commenced on June 23, and continued to July 27, when it was stopped for the want of the creosoted timber required. Work was resumed on November 1, and continued till November 9, when it was discontinued owing to the inclemency of the weather.

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BLUE ROCKS.

Blue Rocks, Lunenburg county, is a small fishing settlement situated in Lunenburg bay, about 4 miles from Lunenburg town. It contains 2 stores, 1 lobster packing factory, and has a population of about 300 people, almost wholly dependent upon the fishing industry for a living. The fishing harbour, which is simply a shelter formed by a small rocky island, situated close to the shore, is much exposed to seas at both its eastern and western entrances, and to afford some measure of protection for the fishing fleet, the department expended the sum of \$4,144 during the year 1909-10 in the construction, by contract, of a cribwork breakwater, between the mainland and the island, at its eastern extremity, thereby closing the eastern entrance and forming a snug harbour.

The work is 190 feet in total length from shore to shore, 20 feet wide and from 2 to 20 feet high, with a break 4 feet high on the seaward side. The work is of native timber cribwork, filled solid with stone and sheathed on the seaward face.

Work was begun April, 1909, and finished in November, 1909.

BOULARDERIE CENTRE.

Boularderie Centre, Victoria county, is on the southern side of the Great Bras d'Or channel, about 8 miles to the westward of its entrance into the Atlantic Ocean and 10 miles to the eastward of its entrance into the Little Bras d'Or lake. The works include a wharf, constructed in 1901-2, and a road, 2,100 feet in length, between the wharf and the highway, completed in 1903-4.

The wharf is 164 feet in length and 20 feet in width with an 'L' at its outer end, 20 by 20 feet. It consists of an approach, of stone, clay and gravel, 10 feet in length; an abutment 30 feet in length, 2 central blocks each 20 feet in length and an outer block 24 feet in line of work by 40 feet, with three spans of 20 feet. The abutment and blocks are of round timber cribwork, creosoted to high water level, and fully ballasted and fendered. The two outer blocks are protected between the fenders by close-sheathing. The depth at extreme low water at the outer end is 13 feet.

Spring tides rise 2 feet.

During the fiscal year 1909-10, the sum of \$25.02 was expended in repairing a small bridge over a water course crossing the road between the wharf and the highway.

Work was commenced November 15, and completed November 20.

Total expenditure to March 31, 1910, \$5,785.58.

BRETON COVE.

Breton cove, Victoria county, is on the northeastern shore of the island of Cape Breton, about midway between St. Ann's harbour and South Ingonish bay.

During 1904-5, a wharf was constructed to serve the purposes of a boat landing, and to afford shelter for fishing boats. It is a continuous cribwork structure, with creosoted timber sub-structure, extending to 3 feet at low water, 195 feet in length and 16 feet wide, with an 'L' on the western side of the outer end, 24 by 20 feet.

As the gravel and shingle, composing the beach to the northeastward of the work, was making up along its eastern face, and threatened to go around its outer end, during 1908-9, the work was extended for a distance of 120 feet, to 5 feet, at low water. The extension is constructed of round timber, creosoted to half-tide, and is 16 feet wide, with an 'L' on the western side of the outer end, 24 by 20 feet.

Spring tides rise 4 feet.

The construction of this work has proved of great benefit to the inhabitants of a large section of the country, both for landing purposes and as a shelter for fishing boats.

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Out of the amount voted for expenditure during 1909-10, viz: \$600, the sum of \$599.88 was expended in closing up the outlet of pond to the eastward of wharf and in opening a straight new outlet, and in protecting its eastern side with rough cribwork protection work, 125 feet long, 15 feet wide and of an average height of 5 feet.

Work was commenced September 23, and continued until the 30th. It was resumed on March 10, and continued until March 16, when it was completed.

CANADA CREEK.

Canada Creek, Kings county, also called Black Rock, is a fishing and farming village of about 150 people on the south shore of the Bay of Fundy, 60 miles east of Digby Gut, 9 miles northwest from Waterville station on the Dominion Atlantic railway, and 8 miles west of Hall's harbour. The harbour is formed by two piers, or breakwaters, built one on either side of a small stream.

That on the east side which is detached from the shore, serves merely as a breakwater and was built by the department in 1878-9, at a cost of \$3,000. It is 150 feet long, 25 feet wide on top and from 12 to 15 feet high, substantially built of round-log cribwork, close-faced, well ballasted and fendered. The breakwater on the western side, originally 248 feet long, which serves both as a breakwater and a landing pier, was built before confederation, at the joint expense of the inhabitants and the provincial government. It is built of round log cribwork, the seaward side being protected by close-sheathing of flatted spars. Beginning with 1874, many expenditures in repairs and renewals have been made by the department, full particulars of which will be found in the departmental report for 1908-9.

In 1909-10, the sum of \$3,344.32 was expended in the construction of an extension 67 feet long, 31 feet wide, and from 21 to 30 feet high, substantially built of round log cribwork, filled with ballast and provided with a break 7 feet high on the seaward side.

Work begun July 5, and finished December 7, 1909.

In March, 1910, the sum of \$28.60 was expended in refastening some close-sheathing that had been torn loose by a storm during the winter.

CANNING.

Canning, Kings county, is a prosperous village of about 1,500 people, mostly engaged in farming and fruit raising, situated on the north bank of the Habitant river, which, 2½ miles below, debouches into the Basin of Minas. It is an important station on the Kingsport branch of the Dominion Atlantic railway, which connects with the main line at Kentville, 11 miles to the south.

In 1904-5, the sum of \$891.27 was expended in the purchase of timber for construction of a cribwork wharf.

In 1905-6, the sum of \$14,137.08 was expended in the construction of a wharf. It consists of a piece of cribwork 260 feet long with an 'L' or return 90 feet long. The main block is 15 feet wide on top with an average height of 22 feet. The 'L' is 12 feet wide on top and 18 feet high. The back batters 3 inches to 1 foot and the front 1 inch to 1 foot. The whole is founded on piles driven to rock and cut off level with the mud.

In 1906-7, the sum of \$8,640.59 was expended in continuing the work.

In 1907-8, the sum of \$3,996.55 was expended in completing the wharf; filling in its rear, and in building a trestle approach to the wharf, 240 feet long by 20 feet high.

In 1908-9, the sum of \$2,763 was expended in completing the trestle work approach to the public wharf and in the purchase of materials for the extension of the wharf down stream.

In 1909-10, the sum of \$5,436.71 was expended in the construction of an extension down stream to the wharf. The new work is 590 feet long, the upper or western

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half length being 20 feet wide on top, and the lower or eastern half 10 feet wide. It is from 8 to 20 feet high. The bottom logs are trenched into, and bolted to the soft freestone rock on which the face of the work rests. At the end of the fiscal year, the work was within about 3 feet of finished height, about three quarters ballasted, but without fenders.

Work begun July 1, 1909, and was suspended February 28, 1910.

CAPE NORTH.

Cape North, Victoria county, is a large district at the head of Aspy bay, on the northeastern coast of Cape Breton island. At the head of the bay there are three extensive sheets of water, known as the North, Middle and South Aspy Bay harbours, inclosed by a beach of sand, $4\frac{1}{2}$ miles in length. The entrances to these harbours are through the sand beach, and are shoal and intricate; the best being that of North harbour.

The northern shore of North harbour is called 'Sugar Loaf,' after a high mountain of the same name, lying immediately behind it.

During 1908-9, the sum of \$583.55 was expended in procuring materials and in the partial construction of a wharf at 'Sugar Loaf,' and during the present fiscal year, 1909-10, the sum of \$245.32 was expended in its completion.

The wharf is 110 feet in length, and 16 feet wide, on top, with an 'L' on the eastern side of the outer end, 8 by 20 feet, and with the exception of the inner end for a distance of 18 feet, which is built of stone, it consists of blocks and spans, constructed entirely of native timber. Along its channel face, which is 24 feet long, it has a depth of 5 feet at low water.

Spring tides rise 3 feet.

Work was commenced on April 5, and completed on April 24.

CARIBOU ISLAND.

Caribou island, Pictou county, is on the Northumberland strait, 5 miles to the westward of the entrance to Pictou harbour.

A cause-way of brush and stone, 1,500 feet in length, between the western extremity of the island and the mainland, on flats dry at extreme low water, commenced in 1890-1, was, after the completion of the works undertaken in 1904-5, up to the level of about 1 foot above extreme high water, or 7 feet above extreme low water, and had a talus of quarried stone on the seaward side, sloping one to one from high water.

The work was damaged and repaired from time to time between 1904-5 and 1908-9. At the beginning of the fiscal year 1909-10, it was in the following condition: the raising of the cause-way and talus to a proposed height of 3 feet above extreme high water was nearly completed over a distance of 454 feet from the mainland; over a further distance of 576 feet (454 feet to 1,030 feet from the mainland), it was raised to an average height of about $1\frac{1}{2}$ feet above extreme high water; and the piles were driven in a proposed pile and brush work 555 feet in length, in bents 5 feet apart, centre to centre, with 3 piles in each bent, to protect the middle third of the cause-way.

Of the \$1,500 appropriated for 1909-10, \$1,206.86 was expended in completing the pile and brush work, including the replacing of 99 piles broken during a severe storm in January, 1909.

Work was commenced August 1, and suspended September 30.

Total expenditure to March 31, 1910, \$12,982.33.

CASTLE BAY.

Castle bay, Cape Breton county (north), and formerly known as Amaguadus, is on the northern side of East bay, the eastern arm of the Great Bras d'Or lake, and is about 3 miles from Benacadie point, at the entrance to the bay.

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The works consist of a block and span wharf with creosoted timber substructure 120 feet long and 20 feet wide, with an 'L' on the eastern side of its outer end, 20 by 20 feet; of a bridge 100 feet long and 20 feet wide, including approaches, across the outlet of the pond, and of a warehouse 10 by 16 feet on the outer end of the wharf for the storing of goods shipped and landed by the ss. *Blue Hill*, which calls here fortnightly during the season, and makes connections with the Intercolonial railway at Grand Narrows.

For the purpose of extending the wharf, which was shoaling up with gravel at the outer end, during the year 1908-9 the sum of \$527.37 was expended in procuring the native timber, iron and ballast required, and during the fiscal year 1909-10, the sum of \$1,796.48 was expended in procuring the creosoted timber necessary to construct the extension to the work.

Total expenditure to March 31, 1910, is \$7,204.25.

CHEBOGUE HARBOUR.

Chebogue harbour, Yarmouth county, is situated about 7 miles south of the town of Yarmouth. Near its mouth and surrounded by Fox island, Veal island, Jacko island and Shortliff point, is a small but well protected anchorage or roadstead which affords shelter to a considerable number of small fishing vessels and other craft, engaged in fishing and general trade. The anchorage is partly protected on the south by Fox island but its western portion, which is mostly dry at low water and much used at or near high tide by boats plying between Chebogue point and other ports and by other craft, is guarded by a gravel bar or beach, 800 feet long, about 20 feet in width from high water to high water and 4 to 5 feet high above H.W.O.S.T.

To preserve the beach, and the anchorage to the north of it, the department, in 1900-1, at a cost of \$1,798.34, built cribwork 360 feet long, 8 feet wide and $8\frac{1}{2}$ feet high. In 1901-2, it was extended 243 feet at a cost of \$1,311.79. In 1903-4, and 1905-6, expenditures of \$67.77 and \$48.25 respectively were made in repairs.

In 1909-10, the sum of \$47.75 was expended in repairs to the floor of the work, damaged by ice during previous winter.

Spring tides rise 15 feet.

Work begun November 5 and was finished November 23, 1909.

CHEVERIE.

Cheverie, Hants county, with a population of about 350, is situated on the right or east bank of the River Avon, where it debouches into the Basin of Minas, some 15 miles north of Windsor, the county town. It is a good farming district, but the principal trade of the place is quarrying and shipping gypsum to the United States.

A wharf, about 100 feet long, was built here many years ago by the provincial government. In 1873-4, the department lengthened it to 170 feet, at a cost of \$2,338.88, the extension being of round log open cribwork, like the old work. In 1882, a further extension of 182 feet was built at a cost of \$5,000. This piece of work is of square timber close-faced, 25 feet high, 25 feet wide on the top, the same width as the former, and the sides batter 1 in 12. In 1885, the sum of \$600 was expended in effecting some much needed repairs to the shoreward side of the wharf. In 1884, the department built a detached breakwater 300 feet distant from the outer end of the wharf for the purpose of protecting the latter from northerly seas, to which it was exposed. This piece of work consists of solid cribwork, 130 feet long, 20 feet wide on top, 35 feet wide at the base and about 23 feet high, built of square timber and close-sheathed on all sides. The seaward side, to a height of 10 feet below high water of spring tides, has a slope of one in one, the sloping faces being covered with 6-inch plank. The block is provided with mooring posts to assist vessels coming to berth at the wharf, as well as with ring-bolts and ladders.

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In 1887-8, the sum of \$500, and in 1906-7, the sum of \$100 were expended in repairs. On the outer 100 feet in length, the flooring, guards, and some of the fenders were renewed; on the next 105 feet of the work, were placed new ties, stringers, guards, flooring and fenders; on the next 60 feet shorewards, most of the flooring was renewed; 205 feet in length of the wharf, included in the above lengths, was raised a height of 1 to 3 feet. In all, 69 new fenders were placed, and 250 tons of new ballast put in. In the fiscal year ending June 30, 1902, the sum of \$768.23 was expended in the purchase of timber for the extension of the detached breakwater built in 1884, as described above.

In 1902-3, the sum of \$2,999.34 was expended in the construction of an extension to the detached breakwater. The new block is 100 feet long, 25 feet wide on top, 22 feet high, battering on the landward side 1 in 4, and plumb on the seaward face, with a break 5 feet high. It is substantially built of round log, stone-filled cribwork, and close-sheathed on the seaward side. In 1903-4, the sum of \$1,487.29 was expended in renewing the top of the middle third in length of the wharf, 80 feet long, 11 feet deep and 30 feet wide. The appropriation did not quite suffice to complete the work. In 1905-6, the sum of \$1,000 was expended in taking down and rebuilding a portion of the shore end of the cribwork, 80 feet long, 8 to 12 feet high, and the full width of the work, and in rebuilding and reinforcing the block on the north side of the work, 100 feet long, 5 to 8 feet wide, to the full height of the work.

In 1908-9, the sum of \$2,935.19 was expended in extensive repairs and renewals. A length of 80 feet on the outer end, which was much decayed, was taken down to a depth of from 6 to 8 feet, and rebuilt. On the shore end a reinforcing block, 60 feet long, 10 feet wide and about 8 feet high, was built to protect the old work. The whole of the p'anking, including most of the stringers, was renewed.

In 1909-10, the sum of \$4,327 was expended in constructing an addition to the wharf. The extension is 80 feet long, 25 feet wide at the top, 30½ feet wide at the bottom and 27 feet high, built of native cribwork, and filled solid with stone. The work was done under contract with H. Macaloney, of Parrsboro, N.S.

Work begun May, and was finished July 26, 1909.

CHURCH POINT.

Church Point, Digby county, is situated on the southeast side of St. Mary's bay, 9 miles southwest of Weymouth. It has a population of 200 people, engaged in farming and fishing. The works, which consist of a wharf, a retaining wall and a breakwater, appear to have been built between the years 1855 and 1866, at the joint expense of the inhabitants and the provincial government.

In 1875-6, the department expended the sum of \$2,000, the inhabitants contributing an equal amount, in repairing the northern face, and in building an 'L' 72 feet long by 20 feet wide, at right angles to it, with the object of preventing gravel from working around the outer end. The movement of the gravel, which is from south to north, has always been more or less of a difficulty and a detriment to the port.

Since 1890-1, the department has expended various sums in repairing, improving, &c. the work, of which full details are contained in the annual report for 1906-7.

In 1907-8, the sum of \$1,999.36 was expended in completing to its full height a portion of the re-enforcing block on the north side of the breakwater, 93 feet long and 13 feet wide.

In 1908-9, the sum of \$2,400 was expended in extensive repairs and renewals.

In 1909-10, the sum of \$598.18 was expended in finishing the upper part of the wharf retaining wall which was partly rebuilt last year. The portion built this year is 145 feet long, 13 feet wide and 4 feet high.

Work begun June 11, and was finished July 19, 1909

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COW BAY (PORT MORIEN)

Cow Bay (Port Morien, Cape Breton county, south), is on the east coast of Cape Breton island, about 18 miles to the eastward of the entrance to Sydney harbour.

During the fiscal year 1909-10, the sum of \$5,000, the amount appropriated for expenditure in 1909-10, was expended in continuing the work of protecting the seaward face of the breakwater and in repairs. Eight concrete blocks, averaging 10 feet in length, 15 feet in height, and 5 feet in width, on top, 7 feet above extreme low water, and 8 feet 9 inches in width from 4 feet above extreme low water to the bottom were placed along the seaward face of the breakwater, bringing the concrete block protection work to within 140 feet of the outer end of the work or to within 91 feet of the inner face of a block 49 feet square at outer end of outer face-work, of which the outer face chambers had been filled with concrete and the outer faces close-piled; a triangular block of concrete, 8 feet by 8 feet by 11½ feet on top, and founded at low water on old cribwork, was constructed at the southeastern corner of the outer end of the inner face work to prevent further damage to the work at this point; a strip of concrete covering 20 feet by 14 feet by 1 foot in thickness was replaced in the southeastern corner of the outer end of inner work; the covering of the breakwater was repaired in places; a breastwork at the inner end of the outer face-works was rebalasted, after constructing a concrete bottom to prevent escape of ballast, and some obstructions were removed from the roadway after a gale in November.

Work was in progress June 23 to September 15, and December 10 to 13. In November, 8 of the concrete blocks protecting 80 feet of the seaward face of the breakwater were undermined and turned over and away from the face-work.

Total expenditure to March 31, 1910, including \$25,000 for purchase of breakwater, \$314,344.88.

COW BAY (OSBORNE'S.)

Cow Bay (Osborne's), Halifax county. Of the 1908-9 appropriation of \$4,000 for Cow Bay, one-half, or \$2,000, was diverted and authorized to be expended in the construction of a breakwater at Osborne's, on the northern side of Cow Bay, about a mile from Cow Bay run, and the sum of \$550.84 was expended in the purchase of timber. The lateness of the season at which the division of the appropriation was authorized, prevented construction from being undertaken.

During the year 1909-10, the sum of \$1,193.55 was expended in constructing the breakwater. The work is of native timber cribwork, 20 feet wide, 100 feet long, 3 feet high, at the inner end and 18 feet high at the outer end, where there is a depth of 6 feet of water at low tide. It is partially sheathed on the seaward side and outer end and has a break 2½ feet high.

Work begun September 2, and was finished October 28, 1909.

CRIBBIN'S POINT.

Cribbin's Point, Antigonish county, is on the west side of St. George's bay, 8 miles to the southward of Cape George, and 5 miles to the northward of the entrance to Antigonish harbour.

The wharf at this place, constructed with the exception of a block at the outer end, 20 feet in line of work by 48 feet, in 1892-3, is 320 feet in length and has an approach partly in embankment with stone retaining wall and partly in clay cutting 195 feet in length. It is 20 feet in width for a distance of 120 feet from the inner end, 30 feet in width for a distance of 180 feet, or to the original outer end, and 48 feet in width over the outer 20 feet. The inner 50 feet is of stone with stone retaining walls; the adjoining 250 feet of native timber cribwork, close-faced and fully ballasted; and the outer block, 20 feet in line of work by 48 feet, completed in 1901-2, of

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round timber laid open-faced with creosoted substructure, fully ballasted and protected on all exposed faces by close-sheathing. The seaward side of the wharf, from within 50 feet of the inner end to the outer block, is protected by close-sheathing and by a talus of quarried stone sloping about three to one from 2 feet above low water, and has a timber break, 4 feet in height, extending from within 50 feet of the inner end to within 20 feet of the outer and to prevent sand from being carried over the work and into the dock.

The depth at extreme low water at the outer end of the wharf, originally 11 feet, is now 6½ feet.

Spring tides rise 4 feet.

Of the \$3,300 appropriated for expenditure in 1909-10, the sum of \$1,446.41 was expended, \$1,390.69 in procuring and landing the creosoted timber, and \$55.72 in repiling the native timber procured last year for reconstructing from above extreme low water, part of the old work; the new work to extend 70 feet from within 10 feet of the original outer end inward on the seaward side, and 60 feet from within 20 feet of the original outer end inward on the inner side.

The landing and piling of the creosoted timber was in progress November 2 to 6, and the re-piling of the native timber, November 11 to 13.

Total expenditure to March 31, 1910, \$29,506.01.

DELAPS COVE.

Delaps Cove, Annapolis county, is situated on the south shore of the Bay of Fundy, 12 miles to the eastward of Digby gut. The breakwater is constructed on the eastern side of the mouth of a small tidal pond which affords safe shelter for fishing boats, and a convenient place for keeping schooners and other small craft during the winter. The breakwater affords a good landing place for coasting vessels, and good shelter from easterly storms. The shore, on the opposite side of the stream, protects the breakwater and the pond from westerly storms.

The breakwater, which is now 185 feet long, 25 to 28 feet wide, and from 12 to 21 feet high, was built by the department in 1878-9. Since its construction it has had frequent expenditures in repairs and renewals, of which full particulars are given in the departmental report for 1906-7.

In 1908-9, the sum of \$2,137.33 was expended in rebuilding a length of 80 feet in the middle of the breakwater that was destroyed by a violent storm the winter before.

Owing to the lateness of the season at which the work was begun, September 21, 1909, it was not completed at the close of the fiscal year.

In 1909-10, the sum of \$57.76 was expended in placing some fenders, and in securing the covering, this work being of an emergent character pending a future vote to complete the renewal begun in 1908-9.

Spring tides rise about 28 feet.

Work begun October 11, and finished October 18, 1909.

D'ESCOUSSE.

D'Escousse, Richmond county, is a thickly settled district on the northeastern coast of Madame island, and on the southern side of the eastern entrance to Lennox Passage, a strait connecting St. Peter's bay with the Strait of Canso.

A wharf with warehouse attached was constructed by the department during 1902-3. With the exception of a cribwork shore abutment, 15 feet in length, the wharf is a pile structure extending to 12 feet at low water, 307 feet long and 22 feet wide, with an 'L' on the western side of the outer end, 22 by 22 feet; the bearing piles outside of the line of low water being of creosoted timber.

The warehouse, 30 feet long and 20 feet wide, was built originally on a pile foundation on the eastern side of the inner end of the wharf, and as it was found to be

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inconveniently located to accommodate the steamers and vessels, which load and discharge at the outer end of the wharf, during the fiscal year 1909-10, the sum of \$633 was expended in removing the warehouse and in placing it on a separate creosoted pile foundation, in the corner formed by the 'L' and the main structure of the wharf.

Spring tides rise 6 feet.

Work was commenced on July 2 and completed on August 18, 1909.

DIGBY.

Digby, Digby county, the shire town of the county, with a population of some 1,500 people, is beautifully situated on the south-western end of Annapolis basin. It is an important station on the Dominion Atlantic railway, 67 miles north of Yarmouth, 150 miles from Halifax, and 20 miles from Annapolis. It is also the port of call for the daily steamer of the Dominion Atlantic railway plying between Digby and St. John. The harbour is open at all seasons and well protected from nearly all quarters; storms, however, from the north and northeast, drive a heavy sea against the pier, and if, at such times, there be much drift ice in the basin the structure is likely to suffer damage.

The pier, nearly 900 feet long, was originally built by the Nova Scotia government some years before confederation.

Full particulars of the work, with details of expenditure in repairs and renewals, will be found in the departmental reports for 1906-7 and 1908-9.

On May 22, 1908, the department awarded a contract to J. E. and Halle Bigelow for the construction of a spur pier for the sum of \$17,900, the department to furnish the creosoted piles. The work was begun early in August, 1908, and completed on August 17, 1909, at a total cost, exclusive of inspection and of any payment made or to be made to the contractors on account of their claim for damages for delay, of \$26,888.10. (Contract, \$17,900; extras to contract, splicing piles, \$38.50; creosoted piles, \$8,949.60.)

The spur pier, which is substantially built of creosoted piles and Georgia pine, projects at an angle of 40 degrees from the middle of the length of the south side of the main pier. It is 351 feet long on the north side and 431 feet long on the south side. It is 50 feet wide and provided with an inclined slip on the north side, 25 feet wide and 300 feet long, descending on an incline of 1 in 9. A track has been laid the whole length of the spur pier, connecting with the one on the main pier, for the convenience of freight handling by the D.A.R.

The object of the spur pier was: first, to provide a berth for the daily steamer to St. John, during the reconstruction of the main pier and, second, to provide a second permanent berth, the need of which had often been felt.

As the outer or northern face of the spur pier was about on low water mark, it was necessary to dredge the whole length of the face and for about 100 feet beyond it, to a depth of 16 feet below L.W.O.S.T. In 1909-10, the sum of \$21,658.15 was expended in continuation of the work of the last two years, in thorough repairs and renewals to the main pier.

The work has been of a very miscellaneous character and carried on under disadvantages, due mainly to the necessity for maintaining rail and steamer traffic, and the handling of a large freight and passenger business. In the shoreward portion of the pier, which is of pile-work, the rotten tops of many piles were cut off and replaced by short lengths of new sound timber. The bottoms of many piles, having been eaten by the limnoria to a few inches in diameter, were cut out and replaced with short pieces of creosoted round timber. The whole of the upper part of this portion was also renewed, including caps, stringers, guard-timbers, most of the braces, and a considerable portion of the deck planking. In the outer cribwork portion of the wharf, its renewal from the bottom was continued. The old inclined slip has been partly

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demolished, removed and rebuilt. The lower 6 to 8 feet of all cribwork renewals are being made in squared creosoted timber.

This work is in a very dilapidated condition and in pressing need of thorough renewal, but its demolition, so far as it has gone, has shown it to be in an even worse condition than anticipated.

On August 20, 1908, the departmental dredge *Canada* arrived at Digby and began dredging on the site of the spur pier on the 22nd. After a few week's work, the dredge left Digby on October 10, 1908, the material being too hard, as reported by the captain, and the dredge being required at Port Mouton.

On January 10, 1909, the spoon-dredge *Saugus*, of the Maritime Dredging company, limited, arrived at Digby, beginning work two days later. This machine ceased work on July 7, 1909, having removed a total quantity of 64,608 cubic yards, or from April 1 to July 7, a total of 38,406 cubic yards of sand and mud.

The work was begun June 1, 1909, and was carried on continuously till March 31, 1910.

GEORGEVILLE.

Georgeville, Antigonish county, is a settlement on the southern shore of Northumberland strait, 6½ miles southwest from Cape George.

During 1892-3, the department, in order to provide shipping and landing facilities, and to make a shelter for fishing boats, constructed a wharf 207 feet long and 20 feet wide, with an 'L' on the western side of the outer end, 20 by 20 feet and during 1896-7-8, it was extended by an addition, 44 feet long and 40 feet wide, with an 'L' on the eastern side of the end, 20 by 24 feet.

For the purpose of increasing the protected area for boats, during 1903-4-5-6-7, a further extension, 98 feet long and 24 feet wide, with an 'L' on the western side of its outer end, 40 feet long and 24 feet wide, was added to the work.

During the fiscal year 1909-10, the sum of \$599.47 was expended upon the construction of a triangular block, in the angle formed between the 'L' constructed during 1896-7-8, and the extension, and for which most of the materials were procured during 1908-9. The sides of the block are 32 feet long, its outer face 45 feet long, its average height is 15 feet, and it consists of round timber cribwork filled solidly with stone, and close-sheathed on the outer face.

Spring tides rise 4½ feet.

The total expenditure on this work up to March 31, 1910, including the cost of the road to connect the wharf with the public road, is \$94,884.95.

The work of construction was commenced on September 13, and completed on October 29, 1909.

GRAND ETANG.

Grand Etang, Inverness county, is on the Gulf of St. Lawrence, about midway between the harbours of Margaree and Cheticamp.

The works at this place are 'harbour works' designed to improve the entrance to a large pond and thus make it available for the use and shelter of fishing boats and small vessels, was completed in 1894-5, and a 'bridge' across the pond, about 500 feet within the entrance was constructed in 1895-6 and reconstructed in 1902-3.

The 'harbour works' include a dredged channel between two piers placed 87 feet apart, except at the entrance where the distance between them is 44 feet. Each pier consists of: brush and stone work, 135 feet in length; brush and stone embankment, with talus and covering of stone, 130 feet in length; open-faced cribwork 100 feet in length, and a cribwork head 30 feet in line of work by 48 feet, with creosoted sub-structure, reconstructed in 1908-9. The brush and stone work and about 65 feet of brush and stone embankment, on each side, are founded on a bottom excavated to 1 foot above extreme low water, and the remainder of each pier on the natural bottom.

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the depth at the outer end, at extreme low water, being 4 feet 6 inches. Dredging, between the piers, to 6 feet at extreme low water, was performed in 1898-9.

Spring tides rise 4 feet.

The 'bridge,' as reconstructed in 1902-3, is 563 feet in length, including the east and west approaches of brush and stone with cribwork abutments, respectively 94 and 51 feet in length, and 438 feet of creosoted pile work. It is provided with a handrail on each side, an opening for boats and a draw. The depth, at extreme low water, over the central 200 feet, is about 6 feet, and to firm bottom, through water and soft mud or slit, from 21 to 24 feet.

During the fiscal year 1909-10, the sum of \$1,142.97 was expended, \$267.39 in repairs to covering of bridge and \$875.58 in removing, by means of a diver, stones, ballast from the cribwork on each side, and gravel which had shoaled the channel, in places, to 2 feet at extreme low water. The intention was to excavate to the original depth of 6 feet at extreme low water, but the amount authorized was sufficient only to excavate to 4½ feet.

Operations were in progress June 7 to July 10, 1909, and March 10 to 22, 1910. Total expenditure to March 31, 1910:—

| | |
|--|-------------|
| On channel and protection works.. . . . | \$39,119 04 |
| On bridge construction, 1895-6.. . . . | \$3,690 20 |
| On repairs to and reconstruction of bridge.. | 6,046 62 |
| | <hr/> |
| | 9,736 82 |
| | <hr/> |
| | \$48,855 86 |
| | <hr/> |

GRASS COVE.

Grass Cove, Victoria county, is on the western side of the Little Bras d'Ou lake, about 2 miles to the northward of Iona, a station on the Intercolonial railway, at the western end of the Grand Narrows Railway bridge.

In order to enable the inhabitants at and in the vicinity of Grass cove, to ship pit timber to the coal mines in eastern Cape Breton, during 1908-9, the sum of \$982.86 was expended in procuring all the native timber, iron and ballast required for the construction of a public wharf, and during the fiscal year 1909-10, the sum of \$2,074.12 was expended for the delivery of the creosoted timber necessary for the substructure of the proposed wharf.

The proposed wharf is a block and span structure, extending to 12 feet at low water, and is to be 164 feet in length and 18 feet wide, with an 'L' on the outer end 13 by 20 feet; the blocks consisting of round timber cribwork, with creosoted timber substructure.

GREAT VILLAGE.

Great Village, Colchester county, is an important village of about 1,000 people, situated in a thriving farming district, on the north side of Cobequid bay and on the Great Village river, about 1½ miles from its mouth, and about 13 miles west from the town of Truro, and 3½ miles from Londonderry station, the nearest railway station.

In the year 1891, the department constructed a cribwork wharf on the site of an old structure formerly owned by private parties and since that date numerous small amounts have been expended in making repairs and renewals.

During the present fiscal year, the sum of \$306.48 was expended in renewing the top of the wharf, including planking, floor-stringers, guard-timbers and mooring posts.

Work begun, January 20, 1910, and was completed on March 24, 1910.

1 GEORGE V., A. 1911

GROS NEZ.

Gros Nez, Richmond county, is a small fishing station at the eastern extremity of Petit de Grat island, which lies to the eastward of Madame island.

For the purpose of restoring to its original condition and to protect a beach, connecting the main-land with the outlying rocky islet, which formed a natural and safe landing place, a breakwater was constructed on its southeastern or Atlantic side in 1895-6-7.

The breakwater is 187 feet in length and 14 feet in width, on top, including 125 feet of round timber cribwork, founded at the level of 2 feet above extreme low water over 60 feet of its length, with a talus of stone on its seaward side, sloping about 3 to 1 from 1 and $1\frac{1}{2}$ feet above high water; a stone embankment 20 feet in length and 3 feet in average height, reconstructed, with stones set in concrete, in 1907-8, and a stone and concrete embankment 42 feet in length and 3 feet in average height, constructed during the fiscal year 1909-10 at a cost of \$299.13.

Work was commenced September 1, and suspended September 27.

Total expenditure to March 31, 1910, including a refund of \$106.95 to the provincial government, \$2,472.47.

HALLS HARBOUR.

Halls Harbour, Kings county, is situated on the south side of the Bay of Fundy, about 65 miles northeast of Digby gut, and 12 miles southwest of Scott's bay; it is about 12 miles northeast of Kentville, the county town of Kings, and headquarters of the Dominion Atlantic railway.

The harbour, though small, is one of the best at high water between Scott's bay and Digby gut. Spring tides rise 39 feet, neaps 33. The village has a population of about 150 people, and some years ago had a considerable shipping trade, which, however, of late years, has greatly declined.

About the year 1839, the inhabitants, aided by the provincial government, built timber retaining walls on each side of the inner harbour, which consists of a land-locked basin, dry at low tide, of about an acre in extent, to permit vessels to lie alongside the public road. About 1844, an addition, seawards to the wall, on the west side, was built, in order to prevent the accumulation of gravel at the mouth of the harbour, and to serve as a breakwater. In 1884, it was repaired by the department at a cost of \$750. On November 6, 1884, the outer block was destroyed by a violent gale, the accompanying heavy sea having the effect of depositing a bank of gravel which almost entirely obstructed the mouth of the harbour.

From 1884 to 1909, many expenditures were made in repairs and renewals, of which a full account will be found in the departmental report for 1908-9. In 1909-10, the sum of \$232.73 was expended in finishing the gravelling of the top of the wharf retaining-wall on the east side of the inner harbour.

Work begun November 1, and was finished December 18, 1909.

HAMPTON.

Hampton, Annapolis county, formerly called Chute's cove, is situated on the southeast coast of the Bay of Fundy, 27 miles northwest of Digby gut, and 6 miles northwest of Bridgetown, an important station on the Dominion Atlantic railway. It has a population of about 200 people, engaged in fishing, farming and the export of cordwood and timber.

In 1855-6, a small pier, 165 feet long was built near the western side of the cove, the provincial government contributing \$600 to its cost. The site was chosen by commissioners, apparently without professional advice, and was objectionable on many accounts. At a cost of \$3,000 in 1879, an addition of 121 feet was made by the de-

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partment, and the older portion of the work was strengthened with the hope of remedying some of the defects of the location.

In 1881, on further examination, it was found that the original work had been badly undermined by the sea and that owing to the direction of the pier, the shingle was fast shoaling the water on the inside of the pier. It was therefore decided to rebuild the structure on another site, about half a mile to the eastward, which work was carried on at a cost of \$2,300. The new pier, as then completed, was 246 feet long, more substantially built and better situated than the old one, it being located immediately to the westward of a small brook, which serves to keep the schooner berth alongside free from sand.

Repairs and improvements were made in 1889, 1899, 1903-4-5. In 1906-7, the sum of \$299.22 was expended in renewing about 100 feet in length of the floor, including stringers; the placing and bolting of a number of new fenders on the shoreward face, and the construction of a low piece of cribwork, 50 feet long, at the head of the breakwater, to prevent the waves from washing away the public road.

In 1909-10, the sum of \$100.39 was expended in miscellaneous repairs to the breakwater, which had been damaged by recent storms.

Work begun November 11, and was finished November 27, 1909.

HARBOUR AU BOUCHE.

Harbour au Bouche, Antigonish county, on the southern side of St. George's bay, about 3 miles to the westward of the northern entrance to the Strait of Canso, is a small natural harbour, about half a mile in length and width, with a depth of about 14 feet at low water.

A wharf on the western side of the harbour, purchased in 1897-8, and repaired and extended during the fiscal year 1909-10, with materials procured in 1908-9, is 192 feet in length including the original crib-work and pile structure, 20 feet in width, extending 170 feet to 10 feet at extreme low water with spaces filled to high water level with brush and stone, and a crossotod pile head 22 feet in line of work by 44 feet, extending to 12 feet at extreme low water.

Construction was in progress August 30 to September 27, and repairs October 1 to 9; the expenditure amounting to \$397.64; \$349.97 in construction and \$47.67 in repairs.

Total expenditure to March 31, 1910, including \$2,500 for purchase of wharf, \$3,613.17.

HARBOURVILLE.

Harbourville, Kings county, is situated on the south shore of the Bay of Fundy, 53 miles northeast of Digby gut, and 9 miles northwest from Berwick on the Dominion Atlantic railway. The population of the settlement is about 200, engaged in fishing and farming, the former being the staple industry. The harbour, which is only 400 feet long by 200 feet wide, and dry at low water, is formed by the mouth of Givan's brook, and affords, at high water, a complete shelter from storms from all quarters drawing up to 14 feet of water.

The works here consist of two breakwaters or piers, one on either side of the entrance to the harbour. They were built many years ago, before confederation, by the provincial government, when the shipping business of the place was considerably greater than it has been since the opening of the Dominion Atlantic railway in 1868. The western breakwater was extended by the department in 1876.

The work was transferred to the control of the Marine and Fisheries Department on June 12, 1888, and since that date numerous expenditures have been made by the Department of Public Works in repairs and renewals, of which full particulars will be found in the departmental report for 1908-9.

1 GEORGE V., A. 1911

In 1909-10, the sum of \$1,869.49 was expended in taking down and rebuilding in solid cribwork, a portion of the eastern face of the breakwater 165 feet long on top, 150 feet long on the bottom, 15 feet wide on top, 9 feet wide on the bottom and 21 feet high.

Spring tides rise 32 feet.

Work begun August 9, and was finished November 30, 1909.

HEATHERTON.

Heatherton, Antigonish county, is a small village $1\frac{1}{2}$ miles above the crossing of the Intercolonial railway over the Pomquet river, a large stream emptying into Pomquet harbour on the southern shore of St. George's bay.

The works include: a work of brush and stone 350 feet in length at face, 50 feet in average width and 5 feet in average height, constructed in 1907-8, immediately below the junction of the Black with the Pomquet river, and a similar work 220 feet in length, 12 feet in width on top, and 6 feet in average height, constructed during the fiscal year 1909-10 at a point about a quarter of a mile below the junction, for the protection of intervale land, part of an Indian reservation, through which the river flows, from damage caused by erosion of its banks.

Work was commenced September 7, and completed October 13; the expenditure amounting to \$322.41.

Total expenditure to March 31, 1910, \$736.91.

INVERNESS.

Inverness, Inverness county, formerly known as Broad Cove, is an incorporated mining town on the northwestern coast of Cape Breton island, about midway between the harbours of Mabou and Margaree, and 60 miles from Port Hastings on the Strait of Canso, with which it is connected by rail.

Of the amount appropriated for expenditure in 1908-9 towards harbour works at Inverness, re-opening and protecting a channel into McIsaac's pond, a small sheet of water with a good depth over a limited area, formerly separated from the Gulf of St. Lawrence by a beach of sand 400 feet in width, and estimated to cost \$82,000, the sum of \$910.96 was expended in procuring nearly all the material, with the exception of creosoted timber, required in the re-construction, with pile, brush and stone work, of 300 feet of old channel protection work on the eastern side of the entrance.

During the fiscal year 1909-10, \$61.87, of the amount appropriated, was expended in taking care of timber delivered in 1908-9, the balance having been reserved to pay the award of the exchequer court for property expropriated, and \$681.05 was expended out of appropriation for creosoted timber, in procuring and taking delivery of the creosoted timber required for work undertaken in 1908-9.

Total expenditure to March 31, 1910, is \$1,654.38.

IRISH COVE.

Irish Cove, Cape Breton county, is on the southeastern shore of the Great Bras d'Or lake, near the entrance into East bay.

The works are: a wharf, completed in 1892-3; and the diversion of a brook in 1907-8.

The wharf is a block and span structure of native timber, 161 feet in length and 20 feet in width, consisting of a shore abutment 47 feet in length; a central block 20½ feet in length, and an outer block 57 feet in length, with an 'L' 20 by 20 feet. The depth at the outer end is 12½ feet at low or 13½ feet at high lake level.

A brook flowing through low meadow-land to the shore and thence in an easterly direction, between the shore and a beach of shingle which had gradually extended to

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within 270 feet of the wharf, was closed in 1907-8, by the construction of a cribwork dam 40 feet in length and diverted by a new channel straight through the beach at a point 850 feet to the westward of the wharf.

During the fiscal year 1909-10, the sum of \$964.52 was expended; \$614.57 in repairs to the wharf, including the renewal of 145 piles of the close-piling of the outer block and of 4,800 feet B.M. of covering, and \$349.95 in constructing a work of brush, stone and piles extending inward along the east bank of the brook, 240 feet from the dam, to prevent the brook from cutting through the low meadow land and resuming its former eastern direction.

Operations were commenced September 1 and suspended October 19.

Total expenditure to March 31, 1910, \$7,922.74.

KELLY'S COVE.

Kelly's Cove, Yarmouth county, lies about $2\frac{1}{2}$ miles south of the present town of Yarmouth. Fifty to one hundred years ago it was the harbour of the place, and around its shores was all that constituted the town. At present, it is merely a shelter for about a dozen fishing boats and there are but a few houses in the immediate vicinity.

The present breakwater-wharf, built before confederation, by the provincial government, is old and decayed, though the bottom timbers are still sound. It is 97 feet in length, $23\frac{1}{2}$ feet in width, and $15\frac{1}{2}$ feet high at the outer end, where, at H.W. O.S.T. there is about 12 feet of water. The work is of ordinary round log, stone-filled, cribwork, and not floored. Immediately to the southwest of the wharf is a piece of cribwork built to protect the beach, 118 feet long, 4 feet high and about 8 feet wide, of which the 30 feet next to the wharf has been destroyed by the waves.

In 1897-8, the sum of \$299.72 was expended in partially rebuilding the top of the breakwater wharf, and in the renewal and repair of 100 feet in length of the beach protection work adjoining the wharf.

For the protection of the fishing fleet, the department, on March 27, 1906, awarded a contract in the sum of \$7,700, for the construction of a new breakwater, which was finished in October, 1906. It is 281 feet long, 26 feet wide on top, and from 6 to 17 feet high, substantially built of round log cribwork, close-sheathed on the seaward side.

In 1906-7, the sum of \$99.60 was expended in underpinning the west or seaward side of the work, which was being undermined by the under-tow set up by the breakwater itself.

In 1908-9, the sum of \$4,299.99 was expended in building an extension to the breakwater, 90 feet long, 26 feet wide and from 14 to 16 feet high.

In 1909-10, the sum of \$650.85 was expended in placing some fenders, omitted last year; in building a small block of cribwork, 12 feet square and 6 feet high on the seaward side of the shore end of the work, to prevent scour, and in removing a number of rocks and boulders that obstructed the berth for fishing craft on the east side. This breakwater has had the expected result of considerably augmenting the fishing business of the place.

Spring tides rise 14 feet.

Work begun June 14, stopped June 30, resumed August 23, and was finished September 30, 1909.

LA HAVE RIVER.

La Have river, Lunenburg county, an important navigable river about 50 miles west from Halifax. The head of navigation is 12 miles from the sea, at Bridgewater, an important town on the Halifax and South Western railway, 72 miles from Halifax, containing large saw-mills, exporting 30 to 40 million feet of lumber annually to the West Indies and South America.

1 GEORGE V., A. 1911

During the year 1909-10, the W. J. Poupore Company, under contract, removed 23,282 cubic yards (at a cost of \$21,337.72) in deepening and widening the river channel, abreast of the lower wharfs of the town.

Work begun August 12, and was completed September 23, 1909.

LITTLE NARROWS (NORTH).

Little Narrows (North) Inverness county, is on the northern side of Little Narrows, a contraction of St. Patrick's channel, an arm of the Bras d'Or lakes, at a point about 7 miles to the eastward of Whyccomagh, and 15 miles to the westward of Baddeck.

In 1908-9, the sum of \$140.38 was expended in procuring part of the materials required in the construction of a wharf to extend 70 feet to 12 feet at low lake level and to consist of a shore abutment 14 feet in length and 16 feet in width, of stone, and a pile extension 56 feet in length and 16 feet in width with an 'L' on the western side of the outer end, 16 by 16 feet with creosoted timber bearing, fender and mooring piles.

During the fiscal year 1909-10, the sum of \$1,198.06 was expended in procuring the creosoted timber and the balance of other materials required; in constructing the abutment; in driving and capping the bearing piles, and in driving the fender and mooring piles.

Work of construction was commenced on December 6, and was continued up to February 24.

LITTLE NARROWS (SOUTH).

Little Narrows, South, Victoria county, is on the south side of Little Narrows, a contraction of St. Patrick's channel, an arm of the Bras d'Or lakes, at a point about 7 miles to the eastward of Whyccomagh and 15 miles to the westward of the town of Baddeck.

The original wharf was constructed by the department during 1887-8, and consisted of an approach of stone, 10 feet long and 20 feet wide on top; a cribwork block 47½ feet long and 20 feet wide, and a native timber pile extension, 72 feet in length and 20 feet wide, with an 'L' 40 feet long and 20 feet wide on the western side of its outer end, and, after its completion, a warehouse was built on the western side of the shore abutment.

Owing to damage by the teredo, during 1897-8, it was found necessary to reconstruct the outer end; a 'T' head 60 feet in length was substituted for the outer 20 feet of the wharf and 'L,' and the bearing piles in three bents of the approach were renewed.

During 1901-2, extensive repairs were again made, and in 1902-3, the head was extended outwards, a distance of 12 feet, with pilework.

During the last fiscal year, the sum of \$2,646.40 was expended in procuring all the materials required for and in reconstructing the pilework. The new work extends to 18 feet at low lake level and consists of an approach 52 feet in length and 20 feet wide, with a 'T' head, 60 feet long on the channel face and 32½ feet wide; all bearing, fender and mooring piles, and braces, walings and lower chocks, are of creosoted timber.

The total expenditure on this work, up to March 31, 1910, is \$6,639.89.

The work was not commenced until November 1, and was completed on December 17, 1909.

LITTLE RIVER HARBOUR.

Little River Harbour, Yarmouth county, is a fishing and farming settlement of about 200 people, 12 miles southeast of the town of Yarmouth.

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In 1908-9, the sum of \$2,000 was expended in building a public wharf of pile-work, 150 feet long, 20 feet wide and from 6 to 15 feet high. In 1909-10, the sum of \$299.01 was expended in building an extension 40 feet long and 30 feet wide. Spring tides rise 13 feet.

Work begun October 8, and was finished October 22, 1909.

LIVINGSTON'S COVE. . .

Livingston's Cove, Antigonish county, is on the southeastern shore of Northumberland strait, about 2 miles southwest from Cape George.

During the year 1909-10, the sum of \$200 was expended in the renewal of 1,500 feet B.M. of covering and in placing some 80 cubic yards of stone on the talus.

Spring tides rise $4\frac{1}{2}$ feet.

Total expenditure on this work up to March 31, 1910, is \$22,211.87.

The work was commenced on September 21, and completed September 30, 1909.

LOWER WASHABUCK BEACH.

Lower Washabuck, Victoria county, is on the southern side of the eastern end of St. Patrick's channel, an arm of the Little Bras d'Or lake.

Crow point is a small wooded island, connected with the mainland by a gravel and shingle beach, about 900 feet in length, from 20 to 50 feet in width, and about 2 feet above high lake level which, with the island, makes a snug little harbour inside.

As the action of the sea, during easterly winds, was wasting the beach, and danger existed of its being cut through and destroying the boat harbour inside, during 1903-4, the sum of \$399.81 was expended in raising the lowest and narrowest portion of the beach, for a distance of 200 feet, by the construction of round timber cribwork, 30 feet wide, and to a height of 3 feet above high lake level.

During the year 1909-10, the sum of \$249.99 was expended in placing brush and stone slopes on the outer faces of the cribwork, to prevent the sea from undermining it.

Total expenditure up to March 31, 1910, \$649.80.

Work was commenced on October 4, and was completed on October 15, 1909.

MALIGNANT COVE.

Malignant Cove, Antigonish county, is situated on the southeastern shore of Northumberland strait, about 10 miles southwest from Cape George.

In the bight of the cove, separated from the sea by a beach of gravel and shingle of from 100 to 200 feet wide, at high water, and about $4\frac{1}{2}$ feet above that level, lies a pond, fed by a small stream, and a shifting channel through the beach connected the pond with the sea.

During the year 1909-10, the sum of \$215.41 was expended in preparing to drive additional close-piling on the channel face of the outer end of the western pier.

Spring tides rise $4\frac{1}{2}$ feet.

Total expenditure up to March 31, 1910, is \$23,397.

Work was commenced on November 11, and was completed on December 20, 1909.

MARBLE MOUNTAIN.

Marble Mountain, Inverness county, is a settlement on the northern side of West bay, an arm of the Great Bras d'Or lake, about 14 miles to the eastward of the head of the bay.

The place was of very little importance until a few years ago, when the extensive limestone quarries there were bought by the Dominion Iron and Steel company, who employ a large number of men, and ship the output of the quarries to Sydney to be used in connection with their smelting works.

1 GEORGE V., A. 1911

During 1906-7-8, a block and span wharf, extending to 15 feet at low water, 185 feet in length and 20 feet wide, with an 'L' on the northern side of the outer end, was constructed by the department.

Out of the amount voted for 1909-10, the sum of \$834.47 was expended on the construction of a road, some 1,050 feet in length and 20 feet in width, to connect the wharf with the public road.

Total expenditure on this work, up to March 31, 1910, not including amount paid for site of wharf and for right of way for road, is \$3,089.06.

Work was commenced on October 14, and was discontinued on December 22, on account of frost and snow.

MARGAREE HARBOUR.

Margaree Harbour, at the mouth of the Margaree river, Inverness county, is on the west coast of Cape Breton island, about 30 miles northeast of Port Hood. It had a narrow intricate channel through which the tide ran at the rate of four knots, and its entrance was obstructed by a bar of shifting sand over which there was, at times, a depth of only 5 feet at extreme low water.

Expenditures have been made by the Department in the construction and maintenance of channel protection and improvement works on the west side of the entrance and in the construction of beach protection works on the east side.

The works on the west side include works built by the provincial government and extended by the department and work of improvement undertaken in 1900-1.

The depth at extreme low water in the channel opposite the west side protection work was found in 1909 to be nowhere less than 10 feet, and over a bar outside, not less than 9 feet.

During the fiscal year 1909-10, the sum of \$300.08 was expended in cutting down to 2 feet below low water, 24 feet of the outer end of the west side protection work, which had been damaged by ice during the winter of 1908-9, and in partly close-fendering the end face of the work thus exposed.

Work was commenced November 13 and suspended on December 31.

Total expenditure to March 31, 1910, including \$5,006 on beach protection works (east side) and a refund of \$274.87 to the provincial government, \$35,520.26.

MARGAREE ISLAND.

Margaree Island, Inverness county, is situated in the Gulf of St. Lawrence, 2½ miles off the western coast of Cape Breton Island, and 27 miles northeast of Port Hood.

A wharf on the eastern side and near the southern extremity of the island, commenced in 1899-1900 and completed in 1901-2, is 100 feet in length and 20 feet in width, including: 28 feet of cribwork, the southern side of which has been strengthened by the construction of a concrete wall 18 feet in length, 4 feet in width and 7 feet in average width; and a cribwork block 72 feet in length. The outer 40 feet was reconstructed during the fiscal year 1909-10, and in repairing and rebalasting the adjoining cribwork the expenditure amounted to \$1,725.90.

The depth at extreme low water at the outer end of the wharf is 5½ feet.

Spring tides rise 4 feet.

The work was in progress August 16 to September 30, October 9 to 30, and November 8 to 15.

During progress of repairs and reconstruction, a succession of storms caused considerably delay and loss of ballast. The outer block was moved to the southward at its inner and outer ends; respectively 2 and 6 feet and had to be finished 2 feet lower than the rest of the cribwork.

Total expenditure to March 31, 1910, including \$1,666.80 charged to appropriation for creosoted timber, \$8,900.75.

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MARGAREE RIVER.

Margaree River, Inverness county, is a large stream on the west side of Cape Breton island, flowing through extensive meadows to the Gulf of St. Lawrence.

Works for the protection of intervalle lands, undertaken in 1907-8 and continued during the two following years, include: upper and lower shear-dams in the Ross-Ingraham settlement, North East Margaree, of piles and brush 15 feet in width, respectively, 420 feet in length and 6½ feet in height; 250 feet in length and 5 feet in height; work of brush and stone at Doyle's bridge and Deagle's intervalle, 5 feet in height, respectively, 320 feet in length and 8 feet in width, and 150 feet in length and 10 feet in width on top.

Of the \$300 authorized for expenditure in 1909-10, the sum of \$245.56 was paid on account of an over-expenditure made in 1908-9 in completing the lower shear-dam in the Ross-Ingraham settlement.

Expenditures to March 31, 1910:—

| | |
|--|------------------|
| Ross-Ingraham settlement (upper shear-dam) | \$1,379 27 |
| “ “ (lower “ “ | 1,165 53 |
| Doyle's Bridge | 200 15 |
| Deagle's Intervale | 297 44 |
| Total | <hr/> \$3,042 39 |

MARGARETVILLE.

Margaretville, Annapolis county, is the most important village on the south shore of the Bay of Fundy, between Digby gut and Scott's bay; it is 42 miles northeast from the former, 36 miles southwest from the latter, and 9 miles north of Middleton, an important station on the Dominion Atlantic railway. It has a population of 500 engaged in fishing and farming.

A pier was begun in 1837 by the provincial government and subsequently extended a length of 471 feet. The work was taken over by the Public Works Department in 1871, since which time it has had frequent repairs and renewals, a full history of which will be found in the report of the department for the year 1907-8.

In 1908-9, the sum of \$2,581.13 was expended in building an extension to the eastern breakwater begun in 1902-3, 50 feet long on the west side, 40 feet long on the east side, from 32 to 40 feet wide and from 22 to 25 feet high.

In 1909-10, the sum of \$288.04 was expended in completing the work. The sum of \$486.02 was also expended in repairs to the west breakwater, which had been damaged by heavy seas in the late autumn and winter.

Spring tides rise about 32 feet.

The finishing of the east breakwater was begun July 5, and was completed July 27, 1909.

The repairs to the west breakwater were begun November 2, and completed March 25, 1910.

M'NAIR'S COVE.

McNair's Cove, Antigonish county, is on the western side of St. George's bay, about 2 miles to the southward of Cape George.

A breakwater, 400 feet in length and 20 feet wide, built during 1872-3-4, on the north side of the cove, was carried away in 1879 by drift ice, to within 100 feet of the shore end, down to from 3 to 6 feet at low water. During the summer of 1883, 70 feet of the shore end was rebuilt, and during 1884-5 the work was extended a distance of 94 feet, but this extension was badly damaged by drift ice in April, 1885, and was subsequently carried away.

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During 1886-7-8, the bottom of the damaged work was dredged out, and a new work, 160 feet in length, 32 feet wide on top, with a sloping face on the seaward side, 8 feet wide and sloping 1 to 1, was constructed and, on its completion, the total length of the breakwater was 330 feet, with a depth of 12 feet at low water at its outer end.

The work was built entirely with native timber, and as it became weakened by the action of the teredo, particularly on the seaward face, during the years from 1890 to 1894, the outer end and the faces on each side of it, for a distance of 20 feet, were protected by creosoted timber close-piling, and its seaward face, by a talus of quarried stone.

During the years from 1897-1901, the timber wall under the sloping face, which was damaged by the teredo, was reconstructed down to low water and close-fendered with hard-wood timber, and the stone in the talus was raised to the top of the close-fendering.

During 1901-2-3, the inner end of the work, which was constructed partly in 1872, and partly in 1883, and was only 20 feet wide, was widened to 30 feet, for a distance of 120 feet, from the outer end.

In the year 1904-5, a block 80 feet long and 32 feet wide was placed across the outer end of the work as a protection to the old work, and to form an 'L' on its western side, for the improvement of the sheltered area on the leeward side of the breakwater. This block is constructed with round timber, creosoted to half tide, fully ballasted, and protected on all outer faces with close-sheathing.

During 1908-9, the top of the outer end of the seaward side of the old work, for a distance of 80 feet, and for a width of 16 feet, including the sloping face, was removed down to 2 feet below low water and reconstructed with creosoted timber up to half tide, and the new face was close-sheathed and the stone in the talus in front of it was raised to high water mark.

The sum of \$3,755.34 was expended during the last fiscal year for the creosoted timber required for a proposed extension of the 'L' on the outer end of the breakwater, 80 feet long and 32 feet wide, and the sum of \$269.11 was expended for urgent repairs.

Spring tides rise 4 feet.

The total expenditure on this work, up to March 31, 1910, is \$81,452.75.

M'PIERSON'S COVE.

McPherson's Cove, Cape Breton county (south), is situated on the southern side of East bay, an arm of the Great Bras d'Or lake, about 32 miles to the northeastward of St. Peter's canal, and 16 miles to the southwestward from the head of East bay.

On September 19, 1908, a contract was entered into for the construction of a wharf, but the work was not commenced until June, 1909, and was completed on July 20, following.

The wharf extends to 12 feet at low lake level, and is a block and span structure, 100 feet long and 20 feet wide, with an 'L' on the eastern side of the outer end, 20 by 20 feet. The shore abutment and blocks are built of round timber, creosoted to high water; the faces of the outer block and western and northern faces of the central block, are close-sheathed between the fenders.

In addition to the construction of the wharf, during 1909-10, the sum of \$500 was expended on the construction of a road, about 1,000 feet in length and 16 feet in width, to connect the wharf with the public road.

The work on the road was commenced October 14, and was completed December 9, 1909.

METEGHAN.

Meteghan, Digby county, is situated on the south side of St. Mary's bay, 25 miles north of Yarmouth, 20 miles south of Weymouth, 2½ miles from Meteghan

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river, and 40 miles south of Digby, the county town. The nearest railway station on the Dominion Atlantic railway, which lies approximately parallel to the coast, and has its terminus at Yarmouth, is about 7 miles distant. The whole coast of St. Mary's bay, from Digby to Yarmouth, is thickly settled, being in fact almost one continuous straggling village for the whole distance of 67 miles.

Next to Digby and Yarmouth, Meteghan is the most important settlement on the bay shore, having a population of 1,000 engaged in farming, fishing, lumbering and general trade.

The harbour works consist of a breakwater and landing pier, of cribwork, built between 1837 and 1860 by the provincial government and the inhabitants. The pier is 200 feet long and 20 feet wide. The breakwater 20 to 26 feet wide, runs out a distance of 925 feet from the shore, and has a return or 'L' of 85 feet at the outer end, which is 24 feet wide and 30 feet high, standing in from 25 to 27 feet of water, at H.W.O.S.T.

In 1875, at which date the work appears to have been taken over by the department, the breakwater was extended and repaired.

From 1875 to 1906, many expenditures were made by the department in repairs and renewals, of which a full account will be found in the departmental report for 1905-6. Since the latter date, no monies have been expended on the work.

In 1909-10, the sum of \$300 was expended in emergent repairs to the covering, stringers and guard-timbers of the outer end of the breakwater which had been damaged by recent storms.

Work begun November 1, and was finished on November 22, 1909.

MIDDLE RIVER (INDIAN BROOK).

Indian Brook, Victoria county, is a large stream emptying into Middle river, about 4 miles from its mouth, and about 1 mile below the shear-dam constructed by the department at Lower Middle river.

At a point on Indian brook, about 1 mile above its junction with the Middle river and immediately below the highway bridge, which crosses the brook, some years ago the brook left its old channel, which was comparatively a straight one and, by cutting a new one through the intervalle, caused a considerable amount of damage.

During 1908-9, the sum of \$432.87 was expended in obtaining the necessary materials for the construction of a shear-dam to deflect the brook back into its old channel and thus prevent further damage to the intervalle; during the last fiscal year the sum of \$700 was expended in its construction.

The shear-dam is 280 feet in length, 8 feet in width, of an average height of 5 feet, and consists of pile-work, filled in solidly with alternate layers of brush and stone and protected by close-piling on the channel face.

Work was commenced on September 22, and was completed on December 22, 1909.

MIDDLE RIVER (LOWER).

Middle River, Victoria county, is a large stream emptying into Indian bay, on the northern side of St. Patrick's channel, an arm of the Bras d'Or lakes.

About 5 miles above its mouth, the river flows through alluvial lands, easily acted upon by the strong currents, particularly during freshets, and by opening up new channels, caused great loss of valuable lands.

Since 1903, three shear-dams were constructed along the river at this point, for the purpose of straightening and confining the course of the river, and the works proved successful as far as they went. At the end of the year 1908-9, the lower dam was 1,042 feet, the middle 220 feet and the upper dam 600 feet in length. All these dams consist of pile-work, filled in solidly with brush and stone, laid in alternate layers, and protected on the channel face with close-sheathing.

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During the last fiscal year, the sum of \$1,100 was expended in constructing a low pile, brush and stone dam, 250 feet in length and 10 feet in width in front of the deepest portion of the upper dam, to prevent undermining of the gravel bottom.

Total expenditure to March 31, 1910, is \$12,229.64.

Work was commenced on August 23 and was completed on October 9.

MIDDLE RIVER (UPPER).

Upper Middle River, Victoria county, is a settlement on the Middle river, a large stream emptying into Indian bay, on the northern side of St. Patrick's channel, an arm of the Bras d'Or lakes, and is situated about 11 miles from and above the mouth of the river.

For the purpose of deflecting the course of the river, above the foot bridge, where it threatened to leave the old and cut a new channel through valuable intervalle lands, during 1907-8-9, the sum of \$2,185.15 was expended in the construction of a shear-dam 400 feet in length; the upper 100 feet consisting of brush and stone, and the lower 300 feet, of three rows of pile-work, 15 feet wide, filled in solidly with brush and stone and sheathed on the channel face with plank driven into the bottom.

During the last fiscal year, the sum of \$401.02 was expended in the construction of a short dam, above the old dam, to prevent the river from cutting in behind it. The new dam is 90 feet in length, of which the upper end for a distance of 30 feet is of brush and stone, and the lower 60 feet is pile-work, filled in with brush and stone.

Total expenditure to March 31, 1910, is \$2,586.17.

Work was in progress from November 8 to 19.

MINASVILLE.

Minasville, Hants county, is a farming and lumbering settlement on the shore of Minas Basin, about 3 miles west of Noel. It contains two stores, post office, and has a population of about 300, within a radius of 2 miles. Two saw-mills are situated here and besides the lumber shipped by them, a large quantity of piling is also exported, making the total shipment about one million feet annually.

The harbour consists of a small bay exposed to winds and sea from the north and northwesterly direction. To protect the shipping and to facilitate the handling of rafts of lumber and piling, the department expended the sum of \$9,000 in the year 1909-10, in constructing, by contract, a breakwater, 350 feet long, 20 feet wide and from 9 to 22 feet high, with a break $3\frac{1}{2}$ feet high on the seaward side. The work was done by Messrs. J. E. & Halle Bigelow.

Work begun June 15, and was finished September 20, 1909.

MIRA RIVER.

Mira river, Cape Breton county (south), is a large stream flowing into Mira bay, a bay on the east coast of Cape Breton island, between Cow bay and Louisburg harbour. It discharges the waters of Mira lake and Salmon river, and is the outlet of an interior navigation of $25\frac{1}{2}$ miles, but the ordinary depth over the bar at its entrance into the bay is only 4 feet and seldom exceeds 8 feet, except in extraordinary spring tides. Two miles above the entrance, the river expands into a lake of varying widths. It is crossed by the Sydney and Louisburg railway bridge and by a highway bridge, near the entrance; by the Albert and Marion highway bridges, respectively $5\frac{1}{2}$ and $13\frac{1}{2}$ miles from the entrance and by the Victoria bridge, at the head of navigation, $25\frac{1}{2}$ miles inland. These, with the exception of the Victoria bridge, are draw bridges. During the summer season several small steamers are engaged in passenger and freight traffic, landing being effected at a small and inconvenient wharf near the Albert, Marion and Victoria bridges.

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During the fiscal year 1909-10, the sum of \$924.93 was expended in constructing a wharf on the east side of the river at Grand Mira (known locally as Grand Mira, south), $3\frac{1}{2}$ miles below Victoria bridge, for which all the materials required, with the exception of the covering, were procured in 1908-9. The wharf is a block and span structure, 20 feet in width, extending 75 feet to 8 feet at low water, summer level, the depth required for small steamers and sailing vessels. A road to the wharf has been constructed by the municipality through land originally belonging to the Roman Catholic Church corporation.

Work of construction was in progress from September 1 to October 12.

Total expenditure to March 31, 1910, \$1,339.63.

MONK'S HEAD.

Monk's Head, Antigonish county, is on the southern shore of St. Georges bay, between the harbours of Antigonish and Piquet. A large sheet of water to the westward of Monk's Head, known as Dunn's Lake, is separated from the bay by a beach of shingle, and from Antigonish harbour by a neck of marsh land.

In 1894-5, a channel for boats was opened between Dunn's lake and Antigonish harbour, and a highway bridge was constructed over its western entrance. Subsequently, the bridge and its abutments were re-constructed and channel protection works consisting of piling, brush and stone were constructed, extending from the bridge inwards, 215 feet on the northern and 240 feet on the southern side. The channel is 700 feet in length, is about 20 feet wide at the bottom and has a minimum depth of 1 foot at extreme low water.

Spring tides rise 4 feet.

During 1904-5 and 1908-9, the superstructure of the bridge was renewed, the faces of its brush and stone abutments were re-constructed, and 150 feet of the channel protection works rebuilt.

During 1909-10 the sum of \$150 was expended for an additional strip of land, 18 feet wide, required on each side of the channel.

Total expenditure to March 31, 1910, including \$150 paid for additional land required, is \$2,504.03.

MORDEN.

Morden, Kings county, formerly called French Cross, is a small fishing and farming village of about 150 people, situated on the south shore of the Bay of Fundy, 50 miles northwest of Digby gut, and 9 miles from Aylesford station on the Dominion Atlantic railway.

The pier or breakwater, which is the most westerly in Kings county, was begun in 1846, at the joint expense of the inhabitants and the provincial government. It is built of round log cribwork, filled with ballast, close-sheathed on the seaward side and outer end. It is about 365 feet in length, and varies in width from 28 feet at the shore end, to 45 feet at the outer end, where it is 26 feet in height. It has had many repairs, renewals and extensions, complete details of which are contained in the annual report of 1904-5.

In 1907-8, the sum of \$100 was expended in again removing an accumulation of gravel from alongside the breakwater.

In 1908-9, the sum of \$236.80 was expended in the repair and renewal of a portion of the covering plank and in the purchase of timber for further repairs and renewals.

In 1909-10, the sum of \$399.83 was expended in filling, with new solid cribwork, a breach about 60 feet long in the seaward face of the shore end of the work, made by heavy seas the previous winter.

Spring tides rise about 32 feet.

Work begun October 11, and was finished November 12, 1909.

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NEW HAVEN.

New Haven, Victoria county, is an important fishing station at the head of a small cove, on the Atlantic coast of the northern extremity of Cape Breton Island, about midway between Ingonish bay and Cape North.

The cove is entirely open to the east and southeast and, during winds from those quarters, fishing boats have to be hauled up upon the beach for safety. During 1893-4 the department expended the sum of \$635.12 in widening and improving the landing, by the removal of large boulders, and in the construction of a cribwork 90 feet long and 16 feet wide, for the protection of the landing beach.

During the fiscal year 1909-10, the sum of \$40 was expended in re-ballasting portions of the top of the cribwork and in widening and improving the landing beach. Spring tides rise four feet.

Total expenditure to November 30, 1909, \$675.12.

Work was commenced on October 2, and completed on October 7.

NOEL.

Noel, Hants county, has a population of about 500, and is situated on the south shore of Cobequid bay, the extreme eastern arm of the Bay of Fundy. It is 13 miles west of Maitland, and 38 miles northwest of Kennetcook, the nearest railway station on the Dominion Atlantic railway. The principal industries are farming and the quarrying and shipping of plaster rock, large quantities of which are exported to the United States each year.

In 1889, a public wharf was built by the department by day labour. It consists, first, of 35 feet in length of brush and stone causeway approach; next, a 30-foot block of cribwork, close faced and filled to the top with gravel and stone; then, 203 feet in length of pile-work, 25 feet wide on top, with a double-row of close-piling on the exposed northern side, and an 'L' at the outer end, with a face length of 62 feet. Along the outer face of the 'L' the work is 24 feet high, having a depth of water at H.W.O.S.T. of 21 feet.

In 1900-1, the sum of \$60.15 was expended in renewing the planking at the outer end of the wharf.

In 1904-5, the sum of \$1,000 was expended in repairs and renewals to the top of the wharf.

In 1908-9, the sum of \$1,977.05 was expended in building an extension to the pile-wharf, 60 feet long and 40 feet wide along the west side and 60 feet long and 10 feet wide on the northern face or outer end of the work.

During 1909-10, the sum of \$274.15 was expended in completing the close-piling and in renewing some pieces of flooring.

Work begun October 8, and was finished October 31, 1909.

The work was transferred to the control of the Department of Marine and Fisheries on October 5, 1889.

OWL'S HEAD.

Owl's Head, Halifax county, is a fishing settlement on the Atlantic coast, immediately west of the entrance to Ship harbour, 50 miles east of the City of Halifax. the population of the place within a radius of about 1 mile is about 300, dependent, almost wholly, upon the fisheries. The value of the annual catch is about \$17,000.

In 1908-9, the sum of \$1,943.08 was expended in the partial construction of a public wharf and in the purchase of timber for its completion in 1909-10.

During the year 1909-10, the sum of \$494.96 was spent in completing the wharf. The completed work is 220 feet long, 20 feet wide, of solid, stone-filled cribwork, 5 feet high at the shoreward end and 18 feet high at the outer end, where there is a depth of 10 feet of water at L.W.O.S.T.

Work begun June 21, and was finished July 21, 1909.

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OYSTER POND.

Oyster Pond, Guysboro county, is one of several large ponds on the northern shore of Chedabucto bay, which form the only boat harbours between Sand Point, on the western side of the southern entrance to the Strait of Canso, and Guysboro harbour, a distance of 15 miles.

The works at Oyster Pond, undertaken for the protection of the entrance, which was improved by hand dredging in 1876, are: a breakwater on the eastern side of the entrance, and a beach protection work and a breakwater on the western side, all of round timber cribwork, fully ballasted and close-fendered on all exposed faces.

The breakwater on the eastern side extends 385 feet from the original point of beach outward, in a southerly direction nearly parallel to the channel, to 1 foot at extreme low water, in 3 sections; 180 feet (built in 1876); 105 feet (built in 1884-5); and 100 feet (built in 1908-9), respectively 14, 16 and 16 feet in width on top. The top of the covering is 5 feet above extreme high water. The beach on the eastern side has gradually extended to within about 90 feet of the outer end.

The protection work on the western side, undertaken in 1897-8, for the purpose of restoring to its original condition the beach which formed a natural protection to the best anchorage in the pond, but had been gradually worn away after the construction, in 1884-5, of the middle section of the eastern breakwater, extends 400 feet in an easterly direction towards the channel near the entrance to the pond, to 4 feet at extreme high water. It is 12 feet in width on top, to within 40 feet of the outer end and 16 feet in width on top, over the outer 40 feet, and has an 'L' or spur on the seaward side, at the outer end, 40 feet in length and 16 feet in width on top. The top of the covering is 4 feet above extreme high water. Since its construction, a beach of shingle has formed on the seaward side out to and around the outer end.

The breakwater on the western side, completed in 1909-10, extends from a point 135 feet to the westward of the inner end of the beach protection work, in a southerly direction, 313 feet to 1 foot at extreme low water, the outer end being nearly opposite the outer end of the eastern breakwater and 370 feet therefrom. It is 10 feet in width on top, over the inner 184 feet and 16 feet in width on top over the outer 129 feet. The top of the covering is 5 feet above extreme high water.

The depth at extreme low water over the bar at the entrance is believed to be 1 foot 6 inches. Spring tides rise 6 feet.

The sum of \$1,917.60 was expended during the fiscal year 1909-10 in completing the construction of the breakwater on the western side, for which most of the materials required were procured in 1908-9, and in improving the entrance by hand dredging.

Operations were commenced June 14, and suspended November 23.

Total expenditure to March 31, 1910, \$12,409.45.

PICTOU ISLAND.

Pictou Island, Pictou county, is situated in the Strait of Northumberland, about 10 miles northeast of the entrance to Pictou harbour.

There were two wharfs on the south side of the island; one near the west and known as the 'west wharf,' and one near the centre, known as the 'east wharf.'

The west wharf is 324 feet in length and 20 feet in width (with the exception of the inner 55 feet, which is only 12 feet in width), and has an 'L' on the east side of the outer end 60 by 30 feet. The depth at extreme low water at the outer end is 4 feet 6 inches.

The east wharf, originally 328 feet in length and 20 feet in width with a depth at extreme low water at the outer end of 4 feet 9 inches, was damaged in 1906 and has since been destroyed.

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In November, 1909, the sum of \$6 was expended in transferring some plank (left after the completion of work at Abercrombie Point) to the island and in repairing the covering of the west wharf.

Total expenditure to March 31, 1910, on 'east' and 'west' wharfs, \$14,431.37.

PLEASANT HARBOUR.

Pleasant Harbour, Halifax county, is a well-sheltered harbour or bay, situated 3 miles west of Tangier, 4 miles east of the mouth of Ship harbour and about 48 miles in an air line east of Halifax. It embraces a scattered population of about 200, engaged in fishing and farming.

In 1908-9, the sum of \$749.99 was expended in the construction of a public wharf and in the purchase of timber for its completion.

During the year 1909-10, the sum of \$30 was expended in piling and properly storing timber on hand for the completion of the work.

Work begun August 3, and was finished August 6, 1909.

PLYMOUTH.

Plymouth, Yarmouth county, is a small but thriving farming and fishing settlement of some 300 people, situated on the west side of Tusket river, near its mouth, 6 miles southeast of the town of Yarmouth.

A small wharf was built here by the inhabitants, many years ago, for the accommodation of fishing craft and small vessels loading fish and farm produce and landing sea manure. Being so far dilapidated as to no longer serve the public need, the department in 1901-2, expended the sum of \$488.21 in building a new wharf of pile-work, 61 feet long, 25 feet wide, and from 6 to 9 feet high, with an approach of gravel-covered embankment 100 feet long.

In 1902-3, the sum of \$97.38 was expended in removing some obstructions alongside, and in completing the road to the pile wharf built the previous year.

In 1905-6, the sum of \$125 was expended in rebuilding a short block of cribwork which was damaged by ice last winter and in gravelling the road approach.

In 1909-10, the sum of \$66.41 was expended in repairs to the floor.

Spring tides rise 15 feet.

Work begun June 21, and was finished June 25, 1909.

PORTER'S LAKE.

Porter's Lake, Halifax county, is a long narrow strip of fresh water, lying nearly north and south, and situated about the middle of Halifax county, or about 15 miles east of the provincial capital. It is about 18 miles in length, from a quarter to half a mile wide and, the water being of good depth for almost its entire length, it is navigable for vessels of 60 tons to its extreme head. The normal level of the lake is some two to three inches above H.W.O.S.T.

Up to about 1873, the outlet, which is directly into the Atlantic, through a gravel beach about 200 feet wide, was navigable for schooners drawing 6 feet of water, and a considerable trade was then done on the lake in the export of timber, lumber, cordwood, farm produce and fish. Since that time, the outlet has been gradually and permanently filling up with accumulations of gravel, washed in by southerly and easterly storms. In order to maintain the outlet, to prevent the road along the margin of the lake from being flooded, and to admit fish into the lake, there was expended by the department between 1881 and 1898, a total of \$2,031.14, in sums of \$40 to \$100.

Since 1901, numerous expenditures have been made on the permanent outlet, described in detail in the departmental report of 1907-8. These expenditures having resulted in but slight, temporary relief, and no permanent improvement, the department, in 1900-1, expended the sum of \$8,262.44 in beginning the construction of a

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permanent channel through the neck of land, 2,400 feet wide, separating the main body of the lake from the extreme head of Three Fathom harbour. The total expenditure on this attempt at a permanent outlet has been \$23,407.22, the last being \$1,484.52 in 1908-9.

In 1908-9, the sum of \$106 was expended in re-opening the old outlet, and the sum of \$596.86 in a new experimental outlet through Half Island beach. This has not proved a success, owing to the great exposure of the beach and the filling up of the outlet by sand and gravel after every heavy storm. \$1,484.52 was expended in further deepening the permanent outlet.

During the year 1909-10, the sum of \$176.09 was expended in opening, and keeping open, the old outlet.

Work begun September 2, and was finished October 23, 1909.

PORT HASTINGS.

Port Hastings, Inverness county, is on the eastern side of the Strait of Canso, $2\frac{1}{2}$ miles to the northward of Port Hawkesbury. The Inverness Railway and Coal Company have piers at this place for the shipment of coal from their mine at Inverness, on the Gulf of St. Lawrence, 60 miles distant.

A contract, entered into September 28, 1908, for the construction of a wharf, warehouse and roadway, was completed during the fiscal year 1909-10.

The wharf consists of a cribwork retaining wall, 105 feet in length and 14 feet in width (with earth and stone filling behind it, 40 feet in width); a triangular cribwork block, in continuation of the retaining wall, 55 feet in length at face, and 65 feet in width, and an outer block 120 feet in length and 40 feet in width, placed so as to be in line with a possible extension of the Inverness Railway and Coal Company's low level shipping pier and nearly parallel to, and 130 feet from, a line in extension of the inner or northern face of the high level shipping pier. The depth, at extreme low water on the southern side of the outer block, varies from $14\frac{1}{2}$ feet at its outer to 10 feet at its inner end. The top of the covering is 5 feet above extreme high water.

Spring tides rise 5 feet.

The warehouse, at the back of the triangular block, is a one-story building, 30 by 20 feet with two doors, a sliding and swing door, on the southern side.

The roadway extends 320 feet from the inner end of the wharf to a public road leading from the railway station to the village of Port Hastings. It is properly graded, covered with broken stone, has plank crossings over the railway, a siding near the inner end of the wharf and a box culvert at the junction with the public road.

Work of construction was commenced June 7, and completed September 24, 1909.

Total expenditure to March 31, 1910, including amount of contract, \$10,550; \$982.20 was paid on account of changes in location of the outer block and roadway, and \$279 for inspection, but not including cost of advertising or of land expropriated, \$11,811.20.

PORT HOOD HARBOUR.

The harbour of Port Hood is on the east coast of Cape Breton Island, about 20 miles to the northward of the northern entrance to the Strait of Canso.

The harbour was formerly a secure one; Smith island, which forms its west side, having been connected with the mainland by a beach of sand. In 1839, the sea made a break through the beach; the opening, at first narrow, was enlarged by the tidal current, with increasing rapidity, until it was entirely swept away. The harbour is now unsafe during northerly gales, except in a small cove on the east side of Smith island.

Works forming part of a proposed breakwater, of brush and stone with stone covering and with a talus of stone on the seaward side, to close the northern entrance,

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are: a work, undertaken in 1903-4 and continued every year up to 1908-9, extending, from a point on the mainland 1,200 feet to the northward of the public wharf towards a point on the island to the northward of Smith cove, 1,600 feet to 19½ feet at extreme low water; and a work, built during the fiscal year 1909-10, extending, from the island, 633 feet to 21 feet at extreme low water, or to within 2,500 feet of the outer end of the work extending from the mainland. The work on the mainland side is 1 foot below extreme high water from the inner end to a point 900 feet from the inner end, 3 feet below extreme high water from 900 to 1,400 feet from inner end and sloping from 3 feet below extreme high water to 19 feet 9 inches below low water at the outer end. The work on the island side slopes from about the level of high water at the inner end to 21 feet below low water at the outer end.

Spring tides rise 4 feet.

During the fiscal year 1909-10, the sum of \$15,000, the amount appropriated, was expended. Operations were commenced June 24 and suspended September 3.

Total expenditure to March 31, 1909-10, \$93,574.34.

PORT HOOD WHARF.

Port Hood, the shiretown of Inverness county, is on the west coast of Cape Breton Island, 20 miles north of the northern entrance to the Strait of Canso.

A pier on the east side of the harbour, commenced by the provincial government in 1865, was originally 550 feet in length and 24 feet in width, with an 'L' on the south side of the outer end 100 feet in length and 25 feet in width. It came under the charge of the federal government in 1871, since which time extensive repairs and renewals have been made, including the construction of a new block, 125 by 25 feet at the outer end, in 1873; the construction of a block, 50 by 32 feet at the south end of the 'L' in 1888-9, and the construction of a block, 71 by 24 feet, at the outer end in 1889-90. The old provincial government work was of square timber, close-faced; the additions and parts reconstructed by the department are of round timber laid open-faced. The pier has been protected on the seaward side, at the outer end and on the south end and inner side of the 'L' by close-piling, and on both sides to within 74 feet of the outer end by a stone talus.

Repairs and improvements were made in 1890-1-2, and nearly every year since 1896-7, including renewal of floor-stringers and covering at the inner end; raising, repairing and close-piling the outer end and 'L'; in placing quarried stone in the talus on the seaward side, and in general repairs to the seaward face.

During the fiscal year 1909-10, the sum of \$1,299.67 was expended effecting the following repairs: a section of the seaward face of the work, 85 feet from the outer end, 40 feet in line of work by 15 feet in width, was cut down to low water and rebuilt; a section of the outer end face, 25 by 20 feet was cut down to an average depth of 5 feet and rebuilt; floor-stringers, covering and cap-timbers were replaced at the inner end for a length of 35 feet; 50 cubic yards of large quarried stone was placed in the outer end of the talus; about 30 piles were driven where required, and general repairs were made to the covering.

Operations were in progress July 4 to October 18.

Total expenditure to March 31, 1910, including \$916.11 refunded to the provincial government, but not including dredging, \$79,991.60.

PORT LORNE.

Port Lorne, Annapolis county, formerly called Port Williams or Marshall's Cove, is situated on the Bay of Fundy, 32 miles northeast of Digby gut, and 6 miles north-east from Paradise station, on the Dominion Atlantic railway. The settlement comprises about 300 people, engaged in fishing and farming.

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The breakwater was begun in 1825, at the joint expense of the inhabitants and the provincial government, the outlay on the work up to 1867 being \$16,000. The first work done by this department was in 1873-4, when the breakwater was extended a length of 67 feet at a cost of \$3,500. In 1882-3-4, the work was further extended a length of 100 feet, width 36 feet and height 25 feet, at a cost of \$5,402.69.

Between 1884 and 1907, numerous expenditures were made for repairs, renewals and extensions, fully described in the departmental report for the year 1906-7.

In 1908-9, the sum of \$2,908.86 was expended in the construction of a new breakwater on the east side of the little harbour. The work is 140 feet long, 25 feet wide and from 7 to 15 feet high.

Owing to the lateness of the season at which the work was begun (September 15, 1909), it was not quite completed at the end of the fiscal year.

In 1909-10, the sum of \$600 was expended in continuing the work which again, owing chiefly to the lateness of the season, was not quite finished.

Spring tides rise about 32 feet.

Work begun October 1, and was suspended on October 30, 1909.

PORT MAITLAND.

Port Maitland, Yarmouth county, is a prosperous and important fishing and farming village, with a population of about 600, situated on the southeast side of the mouth of the Bay of Fundy, 12 miles north of the county town of Yarmouth.

The harbour works were begun about the year 1859, by the provincial government. They consist of an eastern and a western, or main breakwater of cribwork. The former is 400 feet long by some 20 feet wide, and the latter 500 feet long, 22 to 25 feet wide, with a return 54 feet long, 24 feet wide and 27 feet high, along which there is a depth of water of 19 feet at H.W.O.S.T. The breakwaters, or piers, inclose between them a snug high water harbour of two and a quarter acres in extent.

In 1873-4, the department raised and extended the eastern breakwater, and has since maintained and improved the works. Details of expenditure incurred and work done may be found in the annual report of 1904-5.

In 1907-8, and 1908-9, the sums of \$199.61 and \$1,671.05 respectively were expended in repairs and improvements. (Details in report for 1908-9.)

In 1909-10, the sum of \$4,798.38 was expended in taking down the old 'L' of the breakwater, and building a new block of cribwork, 90 feet long, 25 feet wide, and from 18 to 24 feet high. The new block is built on 50 creosoted piles driven through the sand to the hard bottom and cut off at low water mark. The space between the tops of the piles as cut off and the top of the sand beneath, from 2 to 4 feet, was filled with brush and stone. The lower five courses of timber, above the piles are creosoted square timber, 10 inches by 12 inches.

Work begun, June 8, and was finished November 30, 1909.

The work was transferred to the control of the Department of Marine and Fisheries on June 22, 1885.

PORT WADE.

Port Wade, Annapolis county (in former departmental reports called Victoria Beach). Port Wade is situated on the north side of Annapolis Basin, 13 miles southwest from Granville ferry, which is on the north side of the Annapolis river, directly opposite the town of Annapolis. It is 4 miles northeast from the town of Digby, and about 1 mile and a half to the northeast of the entrance to Digby gut. The whole distance from Granville ferry, 13 miles, and for a further 2 miles to Digby gut is a thrifty and well settled farming and fruit growing district, with a considerable fishing industry in the lower 5 or 6 miles.

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Port Wade is the southern terminus of the Middleton and Port Wade railway, built some four years ago, 51 miles long, now part of the Halifax and Southwestern Railway system.

In 1904-5-6, a large pile-work pier was built by the department at a cost of about \$95,000 (contract, \$93,890). The total length of the structure is 1,337 feet, by a width of 50 feet, and a height along the whole length of the 'L' of 57 feet. The 'L' is 456 feet long, and at L.W.O.S.T. carries a depth of 25 feet of water. Spring tides rise 27½ feet, neaps 23 feet. Out of the total number of bents, 153, the shoreward 40 are of native spruce piles, the remaining 113 being of creosoted Virginia pine. Caps, braces, stringers, walings and guards are all of Georgia pine. The flooring is of native spruce 6 inches thick.

In 1909-10, the sum of \$200 was expended in screw-bolting some few of the stringers of the inclined slip, which had been slightly lifted by ice, and in placing 7 ladders at convenient places along the outer face of the pier.

Work begun October 7, and finished November 5, 1909.

PROSPECT.

Prospect, Halifax county, is a fishing village of about 400 or 500 people, situated on the Atlantic coast, 20 miles west of the city of Halifax. The annual catch, according to the report of the Marine and Fisheries, is valued at \$14,000. 100 boats and 150 men being engaged in the industry. The harbour is much exposed to seas from the south and southeast.

In 1903-9, the sum of \$3,226.98 was expended in the construction of a small breakwater for the protection of the fishing fleet. The work, which is substantially built of cribwork of the usual type, is 120 feet long, 30 feet wide and from 12 to 14 feet high, provided with a break on the seaward side.

During the year 1909-10, the sum of \$103.20 was expended in completing the close-sheathing and planking.

Work was begun November 11, and was completed November 22, 1909.

QUODDY ISLAND.

Quoddy Island, Halifax county, is situated on the west side of Harrigan cove, about 100 miles east of Halifax, and 4 miles east of Port Dufferin. Within a radius of 2 miles there is a population of about 100.

In order to provide a landing pier for the little steamer which plies between Halifax and eastern ports, the department in 1908-9, expended the sum of \$823.25 in the partial construction of a public wharf.

During the fiscal year 1909-10, the sum of \$999.83 was expended in completing the pier. The completed work consists of a stone and gravel approach 100 feet long, 20 feet wide and from 1 to 8 feet high, and a block-and-span wharf, 66 feet long, 20 feet wide, with an 'L' 32 by 20 feet at the outer end, where there is a depth of 12 feet of water at L.W.O.S.T.

Spring tides rise about 6½ feet.

Work begun July 10, and was finished September 30, 1909.

ROSS FERRY.

Ross Ferry, Victoria county, is on the northern side of Boularderie island, and on the southern shore of the Great Bras d'Or channel, about 13 miles to the westward of its entrance into the Atlantic.

During 1895-6-7, a wharf was built by the department at a point about half a mile to the eastward of the ferry landing. It extends to 12 feet at low water, and is 106 feet long and 20 feet wide, with an 'L' on the eastern side of its outer end, 30 by 22 feet, and consists of a shore abutment of stone, 23 feet long, a creosoted timber

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pile approach, 61 feet long and of a cribwork head, with creosoted timber sub-structure, 50 feet long and 22 feet wide. During 1897-8, the wharf was connected with the public road, by a well-finished road, 320 feet in length, including a small bridge.

Out of the amount authorized for repairs during 1909-10, the sum of \$549.21 was expended in the renewal of floor-stringers, covering, cap-timbers, upper fenders, and in close-sheathing around the outer corners of the cribwork head.

High lake level rises about $1\frac{1}{2}$ feet above low level.

Work was commenced on November 22 and was completed on December 18, 1909.

SAULNIERVILLE.

Saulnierville, Digby county, with a population of about 250, is situated on the northeast coast of St. Mary's bay, Bay of Fundy, 36 miles southeast of Digby, 32 miles north of Yarmouth, and 3 miles north of Meteghan river.

Some years before confederation, a breakwater, serving also as a landing wharf, was built by the inhabitants, aided by the provincial government. In 1876, the sum of \$4,000 was expended in making thorough repairs to the work and extending it a further length of 100 feet. Since that date, the work has had numerous expenditures in repairs and renewals, of which particulars will be found in the departmental report for 1904-5.

In 1907-8, the sum of \$2,500 was expended in extending the breakwater by a block of cribwork 32 feet long, 36 feet wide and from 22 to 24 feet high.

In 1908-9, the department expended the sum of \$1,499.69 in repairs and renewals. On the seaward side of the breakwater, a piece 90 feet long, 18 feet wide and 18 feet high, being thoroughly dilapidated, when taken down and rebuilt; other general repairs were made to the rest of the work, and some few boulders were removed from the berth alongside and at the outer end.

At low water, the sands are bare for several hundred feet beyond the end of the work.

In 1909-10, the sum of \$99.75 was expended in removing a number of rocks and boulders which obstructed the approach to the breakwater.

Spring tides rise 21 feet.

Work begun September 1, and was finished September 15, 1909.

SAW PIT.

Saw Pit, Lunenburg county, is situated in Lunenburg Back harbour, about $\frac{3}{4}$ of a mile from the town. The wharf was originally a cribwork structure built by the provincial government before confederation for the use and convenience of the inhabitants of the numerous islands and headlands lying on the north and east of Lunenburg peninsula, but since rebuilt in pilework. Small expenditures have been made from time to time in repairs and renewals. In 1899-1900, \$900 was expended in rebuilding the work, which is now 89 feet long, 20 feet wide, with an additional length of 7 feet in an inclined slip, and an approach of 60 feet long of earth and gravel.

During the year 1909-10, the sum of \$50.87 was expended in making temporary repairs, the wharf having been badly broken by ice and in a dangerous condition. A further expenditure is required to rebuild the wharf.

Work begun September 1, and was finished September 6, 1909.

SCOTCH COVE.

Scotch Cove, Victoria county, is an important fishing station in the southeastern part of Aspy bay, on the northeastern side of Cape Breton Island, and is about $\frac{1}{2}$ of a mile south from White Point, on the southern side of the entrance to the bay.

During 1908-9, a breakwater extending to 19 feet at low water, was constructed by the department for the protection of the anchorage and for a landing place for

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the steamer, which plies between the Sydneys and Cape North and calls at different points along the coast for and with freight and passengers.

The breakwater is 320 feet long, and with the exception of the inner end, for a distance of 40 feet, which is of stone, 16 feet wide, it consists of cribwork with creosoted timber substructure, 20 feet wide for a distance of 80 feet, 24 feet wide for a further distance of 80 feet, and 30 feet wide for the remaining distance of 120 feet. The faces of the cribwork are constructed of squared timber, laid open-faced, with ties of round timber, and the work has been filled in solidly with ballast. The seaward face, the outer end, and the inner face for a distance of 30 feet, have been close-sheathed, and a brush mattress, loaded with stone, was placed along its seaward face, for a distance of 200 feet, from the outer end inwards, to prevent scouring of the sandy bottom.

As it was found that the outer end of the work was settling through scour of the sandy bottom, during the fiscal year 1909-10, the sum of \$308.68 was expended in placing brush mattresses, 12 feet wide and well loaded with stone, at the outer end of the work and along its inner face for a distance of 60 feet, and in raising the guard rail around the southwest corner of the work, a height of 2½ feet, to prevent the steamer's guards from catching while rounding it in a heavy sea.

Spring tides rise 4 feet.

Work was commenced on November 1, and completed on November 29.

SEASIDE.

Seaside, Inverness county, is on the east side of St. George's bay, near the southern entrance to Port Hood harbour, and about 2 miles west from Port Hood.

The wharf, undertaken in 1895-6 and completed the following year, is 300 feet in length and 20 feet in width on top, of open-faced cribwork, close-fendered at the outer end, and fully ballasted. The substructure is of creosoted timber and the superstructure of native timber. In 1904, the outer end was moved by ice from the south, 11 feet out of line, the movement commencing 74 feet inward; subsequently, the outer end face-chambers were filled with concrete up to low water and above that with ordinary ballast. The depth at the outer end at extreme low water is 7 feet. Spring tides rise 4 feet.

In 1909-10, \$618.63 was expended: \$41.10 in repairs to the covering of the wharf, September 13 to 18, and \$577.53 in constructing about 75 per cent of a new road 371 feet in length from the wharf to a point on the road leading from the highway, November 10 to December 23.

Total expenditure to March 31, 1909-10, not including amount paid, if any, for right-of-way for new road, \$8,423.98.

SKINNER'S COVE.

Skinner's Cove, Pictou county, is on the western side of Northumberland Strait about 8 miles east of St. John and about 20 miles northwest of the entrance to Pictou harbour. A pond at the head of the cove is separated from the waters of the Strait by a beach of sand 250 feet in width.

The works at this place, for the protection of a channel through the beach, undertaken in 1905-6 and continued in 1906-7, 1907-8, and 1908-9, include: a pier, on each side of a channel dredged to 2½ feet at extreme low water, of brush, stone and piles, 34½ feet in length and 15 feet in width with a cribwork head, 40 feet in length by 20 feet in width, with creosoted substructure, and an extension inward, 156 feet in length on the west side and 68 feet in length on the east side, of brush and stone 14 feet in width, on top, and 8 feet in height, founded in a trench excavated to 3 feet above the level of extreme low water.

Spring tides rise 7 feet.

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In re-opening the channel and in extending it inward about 400 feet to the pond, \$2,822.10 was expended during the fiscal year 1909-10 and in nearly completing, with a small dredging plant procured in 1908-9, a channel between the inner end of the brush, stone and pile work and the pond.

Operations were in progress September 1 to December 6.

Total expenditure to March 31, 1910, \$18,744.14.

SOUTH LAKE, LAKEVALE.

South Lake, Lakevale, Antigonish county, is situated on the western side of St. George's bay, about midway between the entrance to Antigonish and Cape George.

It is a large sheet of fresh water, fed by two streams, and is about 1 mile in length and $\frac{1}{2}$ of a mile in width, with a good depth of water, and is separated from the bay by a beach of sand and gravel, about 900 feet in length, 300 feet in width and about 8 feet above the level of high water springs.

During 1907-8-9, the sum of \$12,554.26 was expended in cutting a channel through the beach, 40 feet wide at the bottom and to 2 feet below high water, and in the construction of a breakwater to protect the north side of its seaward entrance.

The breakwater is 300 feet long, 20 feet wide on top and extends to 4 feet at low water; it consists of round timber cribwork, creosoted to half tide, close-sheathed on the seaward face and outer end, and protected at the outer end for a distance of 100 feet, on the seaward side, by brush and stone, to prevent undermining of its foundation.

During the fiscal year, the sum of \$1,999.98 was expended in completing the channel through the beach to a depth of $1\frac{1}{2}$ feet below low water springs, and in protecting the inner end of the breakwater with brush and stone.

Spring tides rise 4 feet.

Work commenced June 23 and completed November 15.

Total expenditure to March 31, 1910, \$14,554.26.

SPRY BAY.

Spry Bay, Halifax county, is a thriving fishing and farming settlement of about 1,000 inhabitants, situated about 70 miles east of the city of Halifax, and 8 miles west of Sheet harbour.

The harbour is free from ice all the year round. Owing to the absence of a suitable landing pier, the weekly steamer was obliged to tie up to a flimsy and inconvenient landing, which could be approached with difficulty.

In 1903-4, the sum of \$507.94 was expended in the purchase and delivery of timber for the construction of a suitable wharf.

In 1904-5, the sum of \$1,500 was expended in completing the wharf. The structure is of pile work, 200 feet long by 25 feet wide, having an 'L' on the outer end, giving a face length of 55 feet and a depth of water at L.W.O.S.T. of 11 feet.

In 1907-8, the sum of \$269.42 was expended in filling, with stone and brush, a breach made the previous winter by sea and ice, in the approach to the wharf.

In 1909-10, the sum of \$275.40 was expended in constructing a freight-shed 15 feet wide and 25 feet long, with shingled roof and walls.

Spring tides rise 6 feet; neaps, 5 feet.

Work begun November 13, and was finished December 8, 1909.

SPRY HARBOUR.

Spry Harbour, Halifax county, is the eastern arm of Spry bay. It is well sheltered, free from ice and close to the route of the steamer making weekly trips between Sheet Harbour and Halifax. Around the harbour, within a radius of 2 miles, there is a population of about 200, chiefly engaged in fishing and farming.

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In 1908-9, the sum of \$731.49 was expended in the construction of a small public wharf which was not quite completed.

During the year 1909-10, the sum of \$744.16 was expended in completing the wharf. The completed work consists of a block-and-span wharf, with a stone and gravel approach. The approach is 20 feet wide, 50 feet long and from 3 to 8 feet high, and the wharf 20 feet wide by 130 feet long, 20 feet high at the outer end, where there is a depth of 10 feet of water at L.W.O.S.T.

Spring tides rise about 6 feet.

Work begun July 20, and was finished September 29, 1909.

SYDNEY HARBOUR (WHITNEY PIER.)

The district of Whitney pier, so-called on account of its proximity to a shipping pier of the Dominion Iron and Steel company of that name, is on the southern arm of Sydney harbour, and forms part of the city of Sydney.

A contract entered into on November 30, 1908, for the construction of a wharf for the sum of \$9,980, was completed on September 15, 1909.

The wharf, built on the O'Neil property near the works of the Dominion Iron and Steel company, is 20 feet wide and consists of a block and span 110 feet in length; a pile-work 486 feet in length and a cribwork head 24 feet, in line of work, by 40 feet. The top of the covering of the wharf is 5 feet above high water springs. The depth, at extreme low water, at the outer end of the wharf is 6 feet.

Spring tides rise 5 feet.

An additional sum of \$391.94 was paid the contractor for extra work, including the placing of a block at the 30th and 31st bents where rock was encountered 3 feet below the surface; some extra work on abutment and first block, and for additional cost of ballast. The greater portion of the cost of these extras was deducted on account of the decreased cost of the outer block which was in less depth of water than shown on plan.

Work was commenced June 14, and completed September 15.

Total expenditure to March 31, 1910, not including cost of printing and land, \$10,639.19.

TIVERTON.

Tiverton, Digby county, is a village of some 400 people, mostly engaged in fishing, but doing also some little farming, situated on the west side of Petite Passage, separating the mainland of Digby neck from Long Island. It is about 30 miles south-west of Digby town, and 10 miles from Sandy cove.

On February 12, 1903, a contract in the sum of \$17,000 was awarded by the department for the construction of a breakwater to afford shelter to the fishing fleet.

This work, which was completed in January, 1904, is 281 feet long, 30 feet wide on top, and, at the outer end, 33 feet high, where at H.W.O.S.T. there is about 29 feet of water. The whole is substantially built of round log cribwork, the lower portion up to 5 feet above low water ordinary spring tides being of creosoted timber, to resist the attacks of the limnoria.

In 1905-6, the sum of \$48.98 was expended in bolting on the outer end of the breakwater, five hardwood fenders, and in cutting off and in driving in or replacing a number of bolt-heads that chafed the sides of the steamer, making semi-weekly calls.

In 1909-10, the sum of \$400.20 was expended in removing a quantity of ledge rock that obstructed the berth for boats and schooners on the south side of the breakwater.

Work begun September 21, and was finished November 12, 1909.

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TUPPERVILLE.

Tuppersville, Annapolis county, is a small agricultural settlement on the left or south bank of the Annapolis river, 10 miles east of the county town of Annapolis. It is a station on the Dominion Atlantic railway. Within a radius of a mile is a population of some 400 or 500, almost exclusively engaged in farming and fruit raising.

Some forty years ago, a small wharf of cribwork was built by the inhabitants, who formed themselves into a company for that purpose. The structure is still in existence, but dilapidated and in a dangerous and inconvenient place, being situated in the mouth of a narrow creek entering the river at this place.

In 1908-9, the sum of \$1,275.31 was expended in the purchase of materials for the construction of a public wharf.

In 1909-10, the sum of \$1,997.49 was expended in building the work, which is a substantial cribwork structure 70 feet long, 60 feet wide, on the river front, and from 8 to 21 feet high. Along the outer face there is a depth of about 19 feet of water at H.W.O.S.T. Spring tides rise about 29 feet, so that at low water the wharf is dry. A freight-shed 25 by 15 feet has been built on the wharf for the convenience of local shippers and merchants.

Work begun August 9, and was finished November 8, 1909.

VOGLER'S COVE.

Vogler's Cove, Lunenburg county, is an important farming and fishing district, situated 15 miles west of the mouth of La Have river; population about 400.

In the year 1909-10, the sum of \$1,655.98 was expended in beginning the construction of a pile and cribwork wharf and in the purchase of timber for the completion of the work.

Begun July 27, and was suspended on August 28, 1909.

WEST ARCHAT WHARF.

West Archat, Richmond county, is a large settlement on the south side of Madam Island, about 3 miles to the westward of the town of Archat.

The harbour is easy of access and perfectly safe, being sheltered from the south and west by Creighton's Island, and by a breakwater between the island and the mainland.

In the early part of June, 1906, the construction of a wharf, at Bosdet Point, on the northern side of the entrance to the harbour, was commenced and it was completed in August, 1907.

The work consists of a block and span wharf, 88 feet long and 20 feet wide, extending to 15 feet at low water, with an 'L' on the eastern side of the outer end 28 feet long and 24 feet wide, and of a cribwork approach, over the beach, 300 feet long and 16 feet wide, to connect the wharf with the public road. The blocks in the wharf are built of round timber, with creosoted timber substructure, properly banded and fendered, and the outer faces of the outer block are close-sheathed between the fenders. Spring tides rise 6 feet.

The work was commenced on July 10, and completed on July 29, 1909.

During the last fiscal year, the sum of \$145.42 was expended in the construction of a warehouse, 16 by 12 feet, with 7-foot posts, on the 'L' of the wharf.

YARMOUTH HARBOUR.

Yarmouth Harbour, Yarmouth county, lies about N.N.E. and S.W.W. (true) and from the upper wharfs to the mouth is nearly 4 miles long. At about the middle of its length and for a distance of about three-quarters of a mile, it is protected from

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the main waters of the Bay of Fundy by a beach of gravel and shingle connecting Cape Fourchu, an island, or rather a peninsula, about a mile long, with Stoney Point, the southern extremity of the mainland forming the western side of the harbour.

It was found, in 1867, that this piece of beach was wearing down under sea action, and that protection was necessary if the harbour was to be maintained. Accordingly, in that year, the government of Nova Scotia constructed 200 feet of cribwork at Stoney Point. Between 1873 and 1875 the Public Works Department built the remaining 2,800 feet to reach Cape Fourchu. Since 1875 the department has made frequent repairs and renewals, details of which will be found in annual report of 1905-6.

In 1909-10, the sum of \$1,168.80 was expended in taking down and rebuilding two pieces 40 feet long and 18 feet high each and respectively 22 and 20 feet wide. For a further length of 120 feet the face timbers were renewed and numerous minor repairs were made to the upper portion of the work.

Work begun October 11, 1909, and was finished January 15, 1910.

YARMOUTH.

Yarmouth, Yarmouth county. The town of Yarmouth, with a population of about 7,000, is situated at the extreme southwest end of Nova Scotia and, next to Halifax, is the most important shipping port in the province. In 1908-9, there entered inwards 624 vessels of an aggregate tonnage of 164,511, and outwards 639 vessels of 149,116 tons. Value of exports \$1,331,493, of imports \$613,684, and of goods entered for consumption—\$617,025, while the duties collected amounted to \$54,835.04.

Yarmouth is the terminus of the Halifax and South Western railway, 248 miles from Halifax, and of the Dominion Atlantic railway, 216 miles from Halifax. It is also the sea terminus of the Dominion Atlantic Railway Company's line of steamers to Boston, daily in summer and semi-weekly in winter, which do a very large passenger business, the number of passengers for the twelve months being about 70,000.

In addition to local manufactures there is annually shipped to foreign ports from twenty to thirty million feet of lumber.

The shipping and trade of the port are seriously handicapped by the narrowness and crookedness of the harbour channel, and great improvements are necessary, feasible and fully warranted.

The following is a concise statement of the dredging done in the harbour since 1872:—

| | Cubic yards. | Cost. |
|---|--------------|--------------|
| Removal by departmental dredges from July 1, 1872 to April 1, 1909.. . . . | 658,117 | \$189,047 31 |
| Hand-digging in 1887-98.. . . . | 460 | 296 26 |
| In 1907-8, The Atlantic Wrecking Co's crafts <i>Twilight</i> and <i>Coastguard</i> , at \$50 per day, removed a number of isolated boulders, quantity not measurable.. . . . | | 5,692 14 |
| In 1908-9, The Dominion Dredging Co., under contract removed mud and sand. | 297,628 | 154,766 57 |
| And rock in large boulders.. . . . | 86.2 | 431 00 |
| In 1909-10, The Dominion Dredging Co., under contract, removed mud and sand. | 118,599 | 61,714 48 |
| Rock in boulders.. . . . | 16.3 | 81 50 |
| | 1,074,804 | \$412,029 26 |

The dredging in the past two years had been carried down to 18 feet below L.W. O.S.T.

Spring tides rise 13 feet.

Work carried on from April to November, 1909.

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PRINCE EDWARD ISLAND.

BELLE RIVER HARBOUR.

Belle River harbour, Queen's county, is situated on the south side of the island about 4 miles west from Wood Islands and about 6 miles eastward of entrance to Pinette harbour, having been formed originally by the provincial government at the mouth of the Belle river many years ago, as described in departmental report of 1907-8.

The situation being exposed to southerly gales and damage having been done to portions of the original works, their repair and strengthening was effected during the past summer and fall at a cost of \$497.64. Work was commenced August 12, and continued up to September 8, when it had to be discontinued for a time owing to difficulty in procuring labour and materials; was resumed on October 9, and completed by November 9; the work done consisting in rebuilding 80 feet of the sloping face of the inner end of the northern pier or breakwater which was also sheathed and the deck recovered with 3 inch planking; the inner 85 feet of the southern work was floor-stringered and covered, besides which some general repairs were made to other portions of the works which were placed in as good condition as possible with the expenditure.

BRAE HARBOUR.

Brae Harbour (so-called) Prince county, is situated on the northern side of Egmont bay at the mouth of the Brae river, being distant 8 miles east of West Point, and about 6 miles south of Coleman station on line of the Prince Edward Island railway. Its formation, for use as a place of shelter for fishing boats and possibly for shipping point for small vessels, was commenced in 1890 by the residents of the district and construction of works has been since continued at different times by the Dominion government as described in report of 1907-8 of this department.

The inner 575 feet of the pier or breakwater, 18 to 20 feet wide, which was raised 2 to 3 feet and had roadway on top of broken stone and gravel, having become about impassable for traffic owing to storms and high tides during fall and winter of 1908-9, causing settlement and wash-out in the filling, had repair effected at a cost of \$300.61, and although instructions for doing the work were given on July 6, commencement was not made until August 12, worked up to August 28, re-commencing work October 13, and completing it November 11; the work done was making up of settlement in roadway with broken stone and gravel.

CHAPEL PIER.

Chapel Pier, Kings county, is situated on the south side of the Grand or Boughton river about 3 miles above its entrance into Boughton bay.

It was originally built by the local government and is one of the Prince Edward Island piers, control of which was assumed by the Dominion government in 1884, since when it has at different times had expenditures made on it by the department as described in annual report of 1908-9.

During the past season, the sum of \$596.26 was expended in raising, widening and re-constructing, in part, the pier head; besides being too narrow, it had become defective through age and action of the tides. The work was done by first putting in creosoted piles at 5 feet centres and securing, on outer sides of these, three tiers of 12 by 12-inch walings, faces of which were then close-piled, after which, the whole pier head being floor stringered, &c.; was planked with 4-inch covering, the bearing of floor stringers at outer ends, on walings and inwardly either on sound portions of the

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old work or on piles driven for the purpose. General repair and strengthening was also effected to all other portions of the work where found to be required, this including renewal of portions of flooring, fenders, mooring posts, and making up with broken stone and gravel settlement and wash-out that had occurred in roadway approach.

Work was commenced June 26, and continued up to July 28, suspended until August 11 from when it was continued from time to time up to October 14, when put in good and serviceable condition. The different interruptions in the progress of the work was unavoidable on account of labour not being procurable, workmen employed being farmers having necessary harvesting to see to.

CHARLOTTETOWN HARBOUR.

Charlottetown harbour, Queen's county, is reached from Northumberland straits through Hillsborough bay, its entrance from latter, between Blockhouse and Sea Trout point being about $\frac{3}{4}$ of a mile wide, which width continues for about a mile to Canseau and Battery points immediately within which, at the confluence of the Hillsborough, West and North rivers, it expands into one of the finest harbours in America, being accessible for vessels of the largest class and affording perfect safety for any number or description. Charlottetown, the capital of Prince Edward Island, is situated on the north bank of the Hillsborough river a short distance within the entrance and where the deepest water approaches the shore; its wharfs, however, have required being built from 500 to 700 feet long to reach the edge of the channel or deep water, while to render the sides and different docks of service, improvement by dredging is required from time to time, and during the past season the following work of this nature was done by dredge *Prince Edward*.

Charlottetown Steam Navigation Wharf.

The dredge was employed from April 27 to May 13 deepening berth 300 feet long by 50 feet wide on east side of wharf to a depth of 16 feet at low water spring tides, removing about 6,500 cubic yards material composed of mud and soft clay.

Wharf, Department of Marine and Fisheries.

Dredge worked from July 3 to July 12 on the west side, removing about 2,000 cubic yards soft mud and clay.

Peakes' Wharf.

Dredge employed June 21 to July 2 making cut 350 feet long by 40 feet wide and carrying 6 feet at low water spring tides to provide boat landing at all times of tide, about 4,500 cubic yards mud and clay being removed.

ASYLUM WHARF.

The Falconwood asylum for the care of the insane, maintained by the government of Prince Edward Island, is situated on the north bank of the East or Hillsborough river about $1\frac{1}{2}$ miles east of Charlottetown. For convenience in carriage of coal required for the institution, the local government in 1906 built a wharf extending to low water, and to which the department, in the same year, dredged a channel 50 feet wide, carrying a depth of about 6 feet at low water or $15\frac{1}{2}$ feet at high water spring tides that here rise $9\frac{1}{2}$ feet.

During the past season, May 17 to June 17, the channel, which is about 750 feet long, was cleared out and deepened to 8 feet at low water by the dredge *Prince Edward*; a loading berth, also basin to admit of the turning of vessels at the pier's

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head was dredged to same depth; the work required in all the removal of 12,000 cubic yards of material composed of mud and soft clay.

GEORGETOWN HARBOUR.

Georgetown harbour, King's county, is situated on the southwest side of Cardigan bay about 3 miles within Panmure island and is the finest harbour on the southern part of the Gulf of St. Lawrence with the exception of Charlottetown harbour, having depths of water and space sufficient for vessels of the largest class; the rise of spring tides, however, being only 5 feet is a great disadvantage as compared with Charlottetown, but on the other hand the ice does not in general form so soon in the season and breaks up earlier in the spring.

Georgetown, the shire town of King's county, is situated on the north shore of the harbour; this, a place of about 750 inhabitants, is the terminus of the Georgetown branch of the Prince Edward Island railway, and, at the present, winter port for the island, and, as during the past year the Dominion government made a change in the vessels to be used on the winter service between Georgetown and Pictou, Nova Scotia, a greater depth of water at the railway wharf at the former place became necessary, the dredge *Prince Edward*, from November 20 to January 4 last, was employed in deepening the loading berth on the west side of the wharf; the work done, which was making a cut about 200 feet long by 55 feet wide, averaging about 6 feet, leaving an available depth of from 17 to 20 feet at low water, requiring the removal of about 2,500 cubic yards of material composed of clay and hardpan.

GRAHAM'S POND.

Graham's Pond, King's county, is situated on the east coast of the island about 5 miles south of entrance into Cardigan bay, and about the same distance north of Murray harbour. The pond has a length of about half a mile, and width of from 600 to 800 feet, which carries, in the body of the pond and a short distance from within the entrance, a depth of from 5 to 7 feet of water at ordinary pond level. During the summer of 1900, a new channel was opened into the pond by the Marine and Fisheries Department (existing one having gradually worked to the south where it passed over a reef) but the work done not proving effective and the channel having moved back to its former position, attempt for improvement at the place was commenced by the department in fall of 1901, and this since continued at different times as described in departmental report of 1907-8.

During the past season, the sum of \$1,003.77 was expended in extending the northern pier a further 40 feet (this with width of 20 feet); the work as constructed consisted in driving four rows of piles at 5 feet centres, the outer rows of piles being of creosoted timber and on which, after three tiers of 12 by 12-inch walings were secured on end and sides, these were close-piled, the interior space was then filled with alternate layers of brush and ballast and the top floor-stringered and covered with 4-inch planking; all of it being built in a substantial manner, the situation being an exposed one. Commencement was made on June 28, from when, excepting delay from July 1 to 13, awaiting delivery of some materials, it was in progress up to its completion, September 23.

HAGGERTIES WHARF.

Haggerties wharf, Queen's county, is situated on the southern side of the Hillsborough river about 12 miles east of Charlottetown, and is one of the Prince Edward Island piers, built many years before confederation, control of which was assumed by the Dominion government in 1898.

Being an old structure and of indifferent construction, it has required, as described in departmental report for 1907-8, expenditures almost annually, to keep it

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passable for traffic. This was the case during the past season when renewal of the fender piling, covering, &c. of pier head was required and effected at a cost of \$44.10; work was commenced on June 14, and completed June 18.

An expenditure was also made in constructing a building 24 by 16 feet with 8 foot posts, to be used as a waiting room and warehouse, both of which were much required as the pier is the calling place, each week, for a passenger and freight steamer, the stay of which while very short is also, as to time of calling, uncertain; work on the building was commenced on August 10 and completed August 29.

KIER'S SHORE PIER.

Kier's shore pier, Prince county, is situated on the east side of Richmond Bay, about 7 miles north from Kensington, a village and station on line of Prince Edward Island railway. It was originally constructed by the provincial government many years before confederation and was one of the Prince Edward Island piers, control of which was assumed by the federal government in 1883-4, since when it has been much improved by the different expenditures made as described in departmental reports of 1899-1900 and 1906-7.

During the past season, the sum of \$46.33 was expended in the renewal of three of the mooring posts and making general repair of roadway approach.

MIMINEGASH HARBOUR.

Miminegash Harbour, Prince county, is situated on the northeast coast of the island, about 15 miles south of North cape and 18 miles from West point. Works for the formation of a boat harbour were commenced in 1878 and since carried on from time to time as described in departmental reports, 1899-1900 and 1908-9.

During the past season, some of the older portions of the works being found defective, through age and settlement, and washout having occurred in the ballasting of the 'Sand Break' north of the northern breakwater, the sum of \$1,251.28 was expended in reballasting the 'Sand Break,' which was also further fendered and the top close-covered in with poles, secured to the top cross-ties, to prevent washout of ballast during storms. General repair was also made to the covering on the north breakwater, new mooring posts put in; 60 feet in length of the inner protection works reconstructed, and 100 feet further inward repaired; new floor-stringers, covering, &c., being put in as found required.

On the southern work, 170 feet of the inner protection work was reconstructed, a plank walk, as well, 5 feet wide, being laid down on it for safety and convenience of the fishermen, while the inner 100 feet was somewhat strengthened and repaired. The work was commenced July 22, and continued up to October 30, being then finished as far as considered required; additional repair of slight damage done by the severe storm and high tide of December 1 was also effected December 11 to 20 and 29-30, cost of which included an amount mentioned as having been expended during season.

MOUNT STEWART WHARF.

Mount Stewart village, Queen's county, is situated at the head of navigation on the East or Hillsborough river about 18 miles west of Charlottetown, and is the junction of the Souris and Georgetown branches of the Prince Edward Island railway, these, respectively, 38 and 24 miles long, while its distance from Charlottetown by rail is 22 miles. It is approachable at and near high tide by vessels of good size, for, while below it for a couple of miles there is little water in the river at low water spring tides (not more than about 2 feet), the rise of tide at the place being about 11 feet, the greatest on the island, fairly good facilities are offered for the class of vessels (usually schooners of from 80 to 150 tons) wishing to visit it for cargoes, quite a

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number of which call during the spring and fall months, at which times accommodation for them was found quite too limited. To obviate this, purchase was made by the department, in 1908, of an old wharf and its reconstruction and repair commenced as described in departmental report 1908-9.

During the past season, the repairs, &c., were completed, there also being built a well finished warehouse, 16 by 28 feet with 9-foot posts at near inner end of the wharf, at a cost of \$545.11, the work being commenced August 30, and completed October 4, 1909.

NAUFRAGE POND.

Naufrage Pond, King's county, is situated on the north coast of the island, about 20 miles west of East point and 15 miles east of entrance to St. Peter's bay, and distant by road about 13 miles north from Souris, the eastern terminus of Prince Edward Island railway.

The pond has a length of about 1,500 feet, with average width of 700 feet and 4 feet deep at what was ordinary pond level, which was about $3\frac{1}{2}$ feet above height of low water spring tides, or about 6 inches below high water springs, while the channel or outlet from the pond into the Gulf of St. Lawrence, which was at the southern end of the beach, separating the pond from the gulf, which was a small shallow stream about 1,200 feet long and from 10 to 20 feet wide, carrying, for the greater part of its length, but a few inches of water at low tide, was hardly ever available for passage of boats.

Great desire having been expressed for many years by the residents of the district that shelter for their boats be provided at the place, after different examinations of the pond, &c., and plan and specifications being prepared, a contract was entered into with Mr. F. S. Macdonald for the sum of \$12,995, to open a new outlet and channel from the pond and low water mark, only about 300 feet distant, the opening to have a clear width of 40 feet, and have on its sides protection works, these, for inner 200 feet to be 15 feet wide, and outer 100 feet, 20 feet wide; the construction being a series of pile bents, waled and close-piled on faces and ends, the interior being filled with alternate layers of brush and stone, while top was floor-stringered and planked over. Work was commenced June 11, and satisfactorily completed October 19.

The sum of \$161.60 was also expended March 19 to 28, 1910, in constructing a bridge having a roadway 14 feet wide for crossing new channel, making total expenditure at place during fiscal year of \$13,424.10.

NEW LONDON HARBOUR.

New London Harbour, Queen's county, is on the north coast of the island about 10 miles east of entrance of Richmond bay and 9 miles west of Rustico harbour. It is about 3 miles long and nearly as wide, receiving the waters of the Southwest, Stanley, French, and Hope rivers, all navigable for at least short distances, and having at them wharfs or shipping places from which export is made of hay and quantities of produce, and general merchandise, coal, lumber, &c., imported; the district surrounding the harbour being well cultivated and thickly settled and not having, as so many other parts of the island, convenient railway facilities. The harbour is also largely used as a fishing grounds on the Gulf of St. Lawrence.

For improvement of its entrance, which is obstructed by a shifting sand bar, works were commenced in 1878 by the department and since extended year by year as described in departmental report for 1909.

During the past season, the sum of \$1,273.23 was expended, in reconstructing a length of 300 feet of the inner part of the beach protection on eastern side of entrance; the work being of round log cribwork, 12 feet wide, and averaging about 7 feet high which was full ballasted and fender piled at 10 feet centres. General repairs were

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also effected to other portions of the works where settlement and wash-out had occurred; the work was commenced August 9 and completed October 12.

PINETTE HARBOUR.

Pinette Harbour and River, Queen's county, is situated on the north side of the Straits of Northumberland about 4 miles east of Point Prim and by water distant about 20 miles from Charlottetown and 12 miles west from Wood islands the most southerly point of the island.

At the head of navigation on the river, there is a good shipping pier, as mentioned in departmental reports of 1899-1900-6, originally constructed by the local but now maintained by the Dominion government. As, however, when entering the straits, the river had an obstructing sand bar carrying only about 3 feet at low water springs or of 11 feet at high water springs, that here rise 8 feet, while otherwise it possessed a channel 200 to 500 feet wide not carrying less than 12 feet at low water, the traffic was restricted to a small class of vessels.

To improve which condition, the dredge *Montague* commenced June 23 and completed August 14 last, dredging a channel through the bar carrying 8 feet at low water; this cut was 1,500 feet long by 60 feet wide on top, which required the removal of about 16,000 cubic yards of material composed of sand and soft clay.

POWNAI WHARF.

Pownal Wharf, Queen's county, is situated on the northeastern part of Hillsborough bay about 9 miles east from Charlottetown. It was built by the local government before confederation and is one of the Prince Edward Island piers, control of which was assumed by the Dominion government in 1883-84, since when, as mentioned in departmental report of 1907-8, it has at different times, owing to age and its condition, required small expenditures to keep it in passable state for traffic, and will so continue unless almost entirely reconstructed.

During the past season, the sum of \$320.90 was expended in floor-stringering and replanking portions of the pier head, putting in new mooring posts, renewing fender piling and making up settlement and wash-out that had occurred in roadway of approach; which work was commenced September 1 and completed October 29, but not continuously carried on as several interruptions occurred owing to difficulty in procuring labourers, actual time it was in progress being only twenty-one days.

Further improvement was also made by the dredge *Prince Edward* in the channel approaching the wharf, which was widened 25 feet over its full length of 2,500 feet so as to give a depth of 8 feet at low water or of 17 feet at high water spring tides which here rise 9 feet. Dredging was commenced July 15 and completed October 4, about 14,500 cubic yards of clay, sand and hard-pan being removed.

RUSTICO BREAKWATER.

Rustico Harbour, Queens county, is on the north side of the island and about mid-way between East Point and North Cape, and is one of its most important fishing stations.

For improvement of its approach, obstructed by a shifting sand bar, the department constructed, during 1881-2-3-4, works on either side of the entrance for purpose of confining the current at ebb tide and thus, by scour, deepen the water, which result, to a certain extent, was obtained.

These works, as described in the reports of the department of 1899-1900 and 1908-9, owing to storms and action of ice, but more particularly to age and ravages of the teredo, have lately required some repairs about yearly, and during the past season, up to the storm of December 1, in fairly good condition and not considered requiring expenditure, had then a breach of about 30 feet made in inner part of the

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beach protection on north side of the entrance, the repair of which was effected, from December 6 to 11, at a cost of \$115.25.

SOURIS HARBOUR.

Souris Harbour, Kings county, is situated on the southern coast of the island about 16 miles from East Point, and is most important as a harbour of refuge and place of shipment for which it has been made available by the breakwater built and maintained by the Dominion government, as described in departmental reports of 1899-1900 and 1908-9.

Souris is the eastern terminus of the Prince Edward Island railway, which has here a deep water wharf that is a point of call for several lines of vessels plying between other Canadian ports, Newfoundland, &c.

To provide better accommodation for the vessels engaged in this trade, considerable dredging is required and in this connection the dredge *Montague* was employed from April 28 to June 9, last, in deepening the water along the sides and outer end of the railway wharf and side and end of the wharf owned by Messrs. McLean and Matthews, removing in all about 14,000 cubic yards of material composed of sand, mud and clay.

There was also, during the past season, the sum of \$174.33 expended in putting in 8 new mooring posts along the outer section of the breakwater for safety of and to assist in the approach and departure of large steamers to and from the railway wharf, work being done from September 18 to October 4.

SOUTH RUSTICO PIER.

South Rustico Pier, Queens county, is situated near the mouth of the Wheatly river, which empties into the southeastern end of Rustico Bay, and distant from Hunter River station on line of Prince Edward Island railway about 6 miles north. It is one of the Prince Edward Island piers, control of which was assumed by the Dominion government in 1884, since when, as described in departmental report 1901-2, it has required different expenditures to keep it in passable condition for traffic.

During the past season, the sum of \$234.34 was required for making up wash-out that had occurred in the filling of the roadway on its inner portion, which was commenced August 14 and working up to August 20, and completing it September 24 to 30. The sum of \$195.96 was also expended, January 18 to 28, and February 14 to 16, and 23 to 26, and March 3 to 5 (17) in deepening the water at end and for approach to the wharf by the use of an ordinary 'mud digger,' worked by horse-power from the ice with which about 400 cubic yards of mud, clay, washed out ballast, &c., from the wharf, was removed, deepening the water about 3 feet; the total expenditure during the year being \$430.30.

SUMMERSIDE BREAKWATER.

Summerside harbour, Prince county, is on the south side of the island, its approach from the straits being between Cape Egmont on the west and Sea Cow head on the eastern side and where the navigable width is about 15 miles; the immediate entrance into the harbour is between Indian Head and Phelan point, where width is about $1\frac{1}{2}$ miles. A sand spit, however, partly dry at low water, extends about 3,200 feet from Indian Head, while the water is also shoal for a distance from opposite shore, reducing the channel, carrying 18 feet or better at low water spring tides, to a width of about 500 feet opposite the lighthouse situated on the north end of the spit outward of Indian Head. For improvement of the channel, both as to direction and depth, dredging has at different times been done by the department, while for protection from southwest winds, a contract was entered into February 27, 1906, for con-

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struction of a breakwater to extend 3,220 feet from Indian Head to the outer end of Sand Spit, as described in departmental reports, 1906-7 and 1908-9.

The work, which had been discontinued December 15, 1908, was resumed by the contractors on May 3, and completed September 7, 1909, contractor's price for which being \$133,942.

Total expenditure during fiscal year to March 31, 1910, was \$135,937.

SUMMERSIDE HARBOUR.

Summerside harbour, Prince county, is on the southern side of the island, and is the second place in importance as to population, shipping, &c. From it, during the season of navigation (usually from April 15 to December 15), daily communication is had by vessels of the Charlottetown Steam Navigation Company, Limited, to Point du Chene, where connection is made with the Intercolonial railway and so with all parts of Canada and the continent. The harbour is commodious and safe, and as a depth of 20 feet at low water can be carried into it, this, with the rise of tide of from 5 to 7 feet, gives ample water for vessels of good draught, such as that of several lines of steamers from and to Montreal, Newfoundland, &c.

The water carried at some of the wharfs, having been found inadequate, for improvement of this, the dredge *Montague* was engaged from September 2 up to December 10 last, working first, September 2 to 14, on the eastern side of the railway wharf, where a berth about 300 feet long by about 60 feet wide was deepened to an average of 16 feet at low water, this requiring the removal of about 5,500 cubic yards of mud and clay; and secondly, from September 14 to December 10, deepening the water at the end and either side of the Queen's or Town wharf, making loading berths 200 feet long by 60 feet wide carrying a depth of 16 feet at low water spring tides. An approach was also made from the outer deep water to the end of the wharf, and on the eastern side an additional length of 100 feet was dredged to give a depth of 10 feet at low water, this in all requiring the removal of 30,000 cubic yards of mud, clay and hardpan.

STURGEON PIER.

Sturgeon pier, Kings county, is situated on the south side of Cardigan bay, about 6 miles south of Georgetown, the terminus of the Georgetown branch of the Prince Edward Island railway. It is one of the Prince Edward Island piers originally constructed many years before confederation by the local government, control of which, in 1883-4, was assumed by that of the Dominion, since when, as described in departmental reports of 1893-4 and 1903-4, it has at different times required repairs, &c. The work being too low and the pier head having become defective through age and the action of the teredo, &c., a contract was entered into December 21, 1908, with Mr. Neil Campbell, for the repair, raising, &c., of the approach, and widening and extending the pier-head; all of which work being commenced March 22, 1909, was completed October 13 last, at a cost of \$4,382.50.

TIGNISH HARBOUR.

Tignish Harbour, Prince county, is on the northeast coast of the island about 8 miles south of North cape, being situated at the mouth of the Tignish river, a small stream there emptying into the Gulf of St. Lawrence. The formation of a harbour at the place being first commenced in 1868 by the provincial and since continued by the Dominion government, as described in departmental reports of 1899-1900 and 1908-9.

The harbour being found much too small for accommodation of the fishing vessels and boats, a contract was entered into June 4, 1909, with Messrs. J. H. and E. M. Myrick, for the sum of \$23,952 for its enlargement by extending the piers or break-

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waters on either side inwardly; constructing breastwork, dyke, &c. The piers or main portions of the works being constructed by first driving two rows of piles 11 feet apart centre to centre, piles in the rows being 10 feet apart. On the outer rows, three walings of 12 by 12-inch timbers are to be secured, and cross heads or transverse timbers 12 by 12-inch and 14 feet long connect the piles in each bent, after being secured in places, the faces to be close-piled, piles being bolted to each waling, and the whole interior to be filled completely with 4-inch planking.

Owing to difficulty in procuring necessary materials, but part of which was delivered during the summer and fall of 1909, commencement of the work was not made until March 4, 1910, since when it has been in progress, the work done consisting in driving piling for the bents, putting in some of the walings and a few of the transverse timbers.

VERNON RIVER PIER (WEST SIDE).

Vernon River village, Queens county, is situated at the head of navigation on the Vernon river, about 2 miles above its entrance into Orwell bay. The place, although not having over 200 inhabitants, being surrounded by a rich, well-tilled agricultural district, has been largely used as a shipping place, use being made of the pier on the eastern side of the river, the property of the Dominion government, and, until about two years ago, of the old wooden bridge there spanning the river. The bridge, however, having become defective through age was replaced by a steel structure, and this being not available for shipping purposes, as formerly, its loss as such was greatly felt; to obviate this, a contract was entered into December 7, 1908, with Messrs. A. & W. Compton for sum of \$7,300 for the construction of a wharf on the western side of the river, work on which was commenced May 14 and completed October 11, 1909.

It consists of an approach 170 feet long by 24 feet wide and pier-head 125 feet long by 40 feet wide, measured on top, extending out to depth of 10 feet at low water (the base was dredged out by departmental dredge *Prince Edward*, October 7 to November 9, which removed in all about 7,000 cubic yards of material composed of mud and clay) or of 19 feet at high water spring tides, that here rise 9 feet.

PROVINCE OF NEW BRUNSWICK.

ANDERSON'S HOLLOW.

At Anderson's Hollow, in Salisbury bay, on the coast of Albert county, is a breakwater and wharf 570 feet in total length, and generally 25 feet wide on top, built of round cribwork, and sheathed on the weather face.

Spring tides rise 40 feet.

During 1909-10, a couple of day's work were performed on the approach, which had been scoured by rain, and some materials were purchased. The difficulty of procuring labour prevented work from being done.

Expenditure for the fiscal year ended March 31, 1910, is \$239.74.

BEAVER HARBOUR.

Beaver Harbour, Charlotte county, is situated at 35 miles west of St. John in a direct line and 7 miles from Pennfield station, on the New Brunswick Southern railway, is used by coasting vessels as a temporary anchorage, and is besides a fishing station.

On the site of a former provincial government wharf, the construction of a pile wharf, begun in the last fiscal year, was completed in 1909-10. This work consists of

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an approach 320 feet long and 25 feet wide, and a pier-head 40 by 60 feet, with a depth of 24 feet on the face at high water.

Work was begun January 14, and completed on April 28, 1909.

Expenditure during the fiscal year ending March 31, 1910, is \$3,733.

BLACK RIVER.

At Black River, St. John county, a small cove on the Bay of Fundy, 12 miles east of St. John, where spring tides rise about 25 feet, a breakwater or wharf of square cribwork, 153 feet long, 27 feet wide and 30 feet in extreme height, was built by the department in 1879, for the use of coasting vessels.

During 1909-10, small repairs were made to the covering and fenders. Work was begun on December 4 and completed on December 20, 1909.

Expenditure for fiscal year ending March 31, 1910, is \$111.92.

BUCTOUCHE BEACH.

Buctouche Beach, Keut county, 6 to 7 miles long, separates Buctouche harbour from the Northumberland straits.

The works are intended to provide a harbour of refuge and a direct passage for fishing boats from the harbour to the fishing grounds. They were begun in 1905 and consist of two breakwaters on the outside shore; stake and brush breastworks 2,800 feet long to raise the low parts of the beach, formerly washed by storm tides, and pile breastworks on either side of the proposed canal which has been partly excavated by scrapers and hand labour. A 75-foot extension of the north breakwater was begun in 1908, part of the piles being driven and one waling bolted to them.

During the fiscal year 1909-10, the extension was completed, 19 main piles and 72 smaller close-piles being driven, the walings and cross-ties, of square timber, were placed and the interior was filled with brush and stone, and a 50 foot extension of the south breakwater was begun and completed, requiring 63 main piles and 45 close piles. About 175 cubic yards of stone and 30,000 cubic feet of brush were placed in the two extensions; 40 cubic yards of stone were placed in the old section of the north breakwater; 64 braces and 313 lineal feet of walings were bolted to the close pile breastworks along the canal and about 12,000 cubic feet of brush and 110 cubic yards of stone were placed behind them; 423 piles were driven in a 278 foot extension of the breastworks on the south side of the canal, and 111 piles in a 70-foot extension on the north side.

The work was in progress between July 1 and August 7, from August 12 to September 14, on September 25, 29 and 30, 1909, and between February 21 and March 26, 1910.

The total expenditure for the fiscal year 1909-10 was \$2,474.47.

The total expenditure to date has been \$20,323.16.

BURNT CHURCH.

The Burnt Church wharf, Northumberland county, 1,180 feet long, was built in 1900 and 1901.

During the fiscal year 1909-10, a strip of 2-inch plank 10 feet wide was laid along the centre of the approach, 1,140 feet long, over the original covering, which was so much worn as to be dangerous, and new 4-inch planks were inserted, especially along the sides, to replace broken and decayed planks. The original covering of the pier-head was about half renewed. About 30,000 feet B.M. of hemlock plank was used.

The work was in progress between August 26 and September 18.

The expenditure for the fiscal year was \$596.38.

The total expenditure to date has been \$16,379.31.

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CAMPBELLTON.

On May 28, 1908, a contract was entered into with Mr. William Glover for the construction of a deep-water wharf extension 304 feet long and 35 feet wide, to be connected with the easterly end of the present wharf by a span 15 feet long. The contract price was \$35,475. Work was begun on December 18, and by March 31, 1909, a crib, the whole length of the work, had been built to a height of from 30 to 32 feet, sunk in place and filled with ballast.

The work was continued up to April 15, between May 10 and July 14, August 30 to November 30, and from December 20 to January 14, 1910, at which time it required only the laying of the stringers and covering over 275 feet of the wharf and the covering over the span, laying 575 lineal feet of cap, trimming most of the fenders and 10 mooring posts, and placing 2 ladders and 12 ring bolts, to complete the contract.

The roof of the government warehouse was repaired and shingled, requiring 60 M. of shingles; the first span in the deep-water wharfs was strengthening and repaired by inserting 5 new 10 by 12-inch stringers on edge; place a new fender and new ladder on the wharf; spread about 1,000 loads of gravel over the interior of the wharfs; repaired a short length of cap, and rebolted several piles on the outside face; cleaned the wharf of rubbish, and procured, for use next season, about 200 cubic yards of ballast.

The expenditure under the contract was \$16,325.

The government dredge *St. Lawrence* was employed during the season in deepening the shoal at the Traverse, about 4,000 feet long, to 16 feet at low water ordinary spring tides and in widening and at the berths about the wharfs to about 18 to 22 feet at low water. This work was continued close to the wharfs and to extend a berth for schooners with 12 feet at low water on the inside, which could not be reached by the *St. Lawrence*, by the dredge *Gray Loggie* belonging to Messrs. A. & R. Loggie, which removed a total of 8,246 cubic yards.

The total expenditure up to the end of the fiscal year, not including dredging, was \$179,611.65.

Old Ferry or Market Wharf.

About 100 cubic yards of gravel were spread over the interior of the 'Market wharf' during the summer of 1909, the cost of which is included in the amount expended at Campbellton.

CAPE BALD.

The contract for a breakwater at Cape Bald was entered into with E. A. Wallberg on April 20, 1909.

The work is of round timber cribwork filled with ballast and with reinforced concrete faces. It will consist of a pierhead 105.5 feet long on the centre line and 30 feet wide, with about 11½ feet of water at low water ordinary spring tides on the inside or 15½ feet at high water ordinary spring tides, and an approach 619 feet long on the centre line of which 200 feet is 15 feet wide and 419 feet 20 feet wide on top.

During 1908, a right-of-way was acquired and a road constructed to the shore by day labour.

The contract work was begun on June 6, 1909, and by November 23, when it closed down for the season, the cribwork was complete and covering laid for a length of 490 feet; the cribwork stepping down to about high water level in a further distance of 25 feet. An additional crib 56 feet long and 13 feet high was sunk and the remaining crib of the approach 47½ feet long was built 7 to 8 tiers high. The concrete faces were completed for 394 feet on the north and 483½ feet on the south sides and end about 14 feet further on the north and 20 feet further on the south sides. Four complete mooring posts were completed and one begun, and four ladders were

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built. Two davit sockets were set in the concrete face. About 60 cubic yards of rock were removed towards completing the grading of the roadway approach.

The expenditure for the fiscal year 1909-10 amounted to \$17,927.54.

The total expenditure to date has been \$20,734.10.

CAPE TORMENTINE.

The Cape Tormentine (Westmorland county) breakwater pier was constructed between 1886 and 1892, since when repairs have been in progress annually.

During the eight months ending November 30, 1909, 154 chocks 10 by 12 inches by 18 to 24 feet long were placed between the 12 by 12-inch creosoted piles along the inside faces of the pier to prevent the piles being cut into by vessels, and the outside faces were sheathed with 5-inch hardwood plank for a length of 71 feet, 8½ to 10 feet deep, to preserve the creosoted piling from wear by the ice. Parts of the hardwood sheathing placed before were rebolted; 58 lineal feet of cap-timber was laid and the tops of 90 creosoted piles were trimmed and bolted. A steel plate 6 by 4 feet was placed about the north corner. The donkey engine, scow, boat, and freight shed doors were repaired. Seventy-seven cars of large and small stone were unloaded and the rough stone talus along the north and east faces was largely relaid to form a smooth slope.

After the work had closed down, a heavy storm carried the scow off the blocks, broke the warehouse doors, carried away seven face timbers, a carload of stone, &c. The stone and timber was recovered, warehouse repaired, and the scow blocked up again.

One hundred and thirty-two cubic yards of small and 386 of large stone were procured during the fiscal year.

The work was in progress between May 6 and December 6.

The expenditure for the fiscal year 1909-10 was \$5,936.72.

The total expenditure to date has been \$376,769.86.

CARAQUET.

The Caraquet (Gloucester county) deep water wharf, 1,700 feet long, was begun on July 9, 1902, and completed on October 31, 1905.

A warehouse 60 feet 8 inches long by 20 feet 9 inches wide was nearly completed by March 31, 1909.

In April, 1909, an office and waiting room were partitioned off at one end of the building at a cost of \$51.

In May, a cut was made 10 feet wide through the snow drifts 4 to 10 feet deep in a length of 500 feet of the road leading to the wharf, and deep ruts in the road after the frost went out were filled in to enable about 1,000,000 feet B.M. of lumber to be hauled to the wharf on the opening of navigation, at a cost of \$44.60.

Ten dollars and seventy cents was expended in July in widening a boat landing on the side of the wharf by placing timber and plank over projecting cross-ties which before were a danger to boats approaching the wharf.

The expenditure for the fiscal year 1909-10 was \$106.30.

The total expenditure to date has been \$78,341.15.

CARAQUET HARBOUR.

Dredging was begun and was in progress by the dredge *Hayward*, under contract with Messrs. A. and R. Loggie, between June 23 and August 4, across the shoal in Caraquet harbour, about 3½ miles below the deep water wharf. The least depth on the shoal is 15.2 feet at low water ordinary spring tides, and the total length between the 20-foot contours was 4,000 feet.

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The dredge made a cut to a depth of about 20 feet at low water ordinary spring tides, 1,100 feet long and 75 to 140 feet wide.

48,772 cubic yards of sand and mud were removed.

CHATHAM.

Dredging was in progress between April 28 and May 19, 1909, in the boom belonging to J. B. Snowball Co., Ltd., at their Chatham sawmill, by the *Prince Louis*, of the W. J. Poupore Dredging company.

Soundings were taken in the boom, before the dredging and again in September, from which the calculations show that 8,726 cubic yards measured in situ or 10,906 cubic yards barge measurement of pulp, mud, old logs, &c., were removed.

The Snowball company claim that as mill owners are prevented by the government from discharging sawdust in the rivers, the government should also have taken steps to prevent the filling of the boom and shoaling of the river by the discharge from the pulp mill, and on this account chiefly, they ask that the government assume the cost of this dredging, which at 20 cents per cubic yard would be \$2,181.60.

COCAIGNE.

The Cocaigne, Kent county, public wharf was begun in 1881-82, 224 feet which had gone to decay was removed in 1898-99 and the remainder rebuilt.

The covering being much worn and decayed, except on the part built two years ago to widen the wharf, it was renewed during the fiscal year 1909-10. 13,283 feet B.M. of 3-inch hemlock plank was used, and 567 feet B.M. of 8 by 10-inch timber, 90 feet of cap timber, 6 fenders and 6 bridles, between the fenders, were renewed. Half of the stringers, the caps, fenders, bridles, and mooring posts were painted with carbolineum.

The work was in progress from September 16 to 27, and from November 2 to 8.

The expenditure amounted to \$275.80.

The total expenditure to date has been \$13,021.80.

CUMMINGS COVE.

Cummings Cove, a fishing station, lies at the southwest end of Deer island (a part of the county of Charlotte), and is distant $1\frac{1}{2}$ miles from Fairhaven, and the same distance from Chocolate cove.

On January 21, 1910, a contract was let for the construction of a wharf consisting generally of a trestle approach, 23 feet in width and 290 feet in length, and cribwork 150 feet in total length, battered on the side at the rate of 1 in 10. For 80 feet the cribwork is to be the same width as the trestle approach, and for the remainder of the length the cribwork is to be 50 feet in width, the pierhead being built at an angle.

By the end of the fiscal year, preparations were being made, but work had not actually been begun.

DORCHESTER.

In 1908, a public wharf was built by contract at Dorchester, Westmorland county, immediately below and connected by a span of 6 feet with the Intercolonial Railway wharf.

During the fiscal year 1909-10, a bed for vessels 240 feet long and 41 feet wide was constructed by day labour in front of the wharf, consisting of a retaining wall of brush, stone and mud, about 4 feet high on the outside and 20 feet wide. The mud bottom of the interior was excavated and graded level with the front, the top of which is 32 feet below the top of the wharf. Brush was placed in a hole at the southwest

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corner of the wharf, and the mud was excavated and levelled along the lower 75 feet of the inside face and a stick of timber and layers of brush were placed across the lower end to retain the mud, to form a second bed for scows and schooners. The inner bed is 30 feet wide and its top is 18 feet below the top of the wharf. A chute for lumber about 2 feet wide and 18 inches high was also constructed in the wharf, opening out about 12 feet below the top at the outside face for loading vessels at low tide.

The work was in progress between August 28 and October 12, from October 16 to 20 and on the 26th and 27th.

The expenditue for the fiscal year 1909-10 was \$851.72.

The total expenditure to date has been \$18,521.73.

DOVER-GAUTREAU VILLAGE.

During 1907, an appropriation for a wharf in the district of Dover, Westmorland county, on the Petitcodiac river, was available, but on account of the impossibility of bringing the people to an agreement as to the site, construction was not begun. It was decided in 1908 to build two smaller wharfs than the one first proposed, about 3 miles apart, the upper at the point known as Steeves' Landing, for the accommodation of the river steamer and the shipment of farm produce, the second wharf at Gautreau village for a landing place for scows and fishing boats. Accordingly, materials were procured for the two wharfs, and at Gautreau village, a right-of-way was purchased, 2,826 feet long and 33 feet wide, and graded 20 feet wide between ditches from the main road to the site of the wharf.

During the fiscal year 1909-10, the construction of the Gautreau wharf was in progress, and a covered drain, 4 feet wide, was built crossing the road.

The wharf is 193 feet long and consists of a section 64 feet long and 16 to 17 feet wide on top, with the sides walled up with ballast poles secured to short cross ties, and the interior composed of brush and stone mixed with marsh mud and surfaced with gravel; a second section 98 feet long and 15 feet wide on top, of round timber in open cribwork covered with 3-inch planks, and a pier-head, 30.2 feet long and 31.8 feet wide, of round timber in open cribwork covered with 3-inch plank. The pierhead is 22 feet high from the foundation to the floor on the outer face, the foundation being 3 feet below the surface of the mud.

On October 30, when the work closed down for the season, about 70 cubic yards of ballast were still required to complete the wharf.

Along the outer face and lower end of the pier-head, beds for vessels and scows are desired to be formed by levelling the mud which should be retained along the outside by banks of brush and stone.

The work was in progress between August 1 and September 10, from September 14 to 21, September 23 to October 11, October 13 to 18, and from October 21 to 30.

The expenditure for the fiscal year 1909-10, on the Gautreau wharf was \$1,613.28.

The total expenditure to date on the Gautreau wharf has been \$3,250.49.

DOVER-STEEVES' LANDING.

The Steeves' Landing wharf, Westmorland county, is 187½ feet long and consists of a brush and stone section 45½ feet long and 15 feet wide on top, a cribwork approach 110 feet long and 15 feet wide, and a pier head 32 by 31 feet. The outer face of the pier head is 26½ to 27 feet high to the top of the floor from the foundation, which is 1½ to 2 feet below the surface of the mud.

The wharf was begun on August 2, 1909, and work for the season ended on November 30, when the first section still required about 5 to 10 yards of stone, a few loads of mud and the gravel surfacing. The timber section still requires about 50

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cubic yards of stone, 26 fenders and the cap timber. Beds for vessels and saws are also desired.

The expenditure for the fiscal year 1909-10 was \$2,398.99.

The total expenditure on the Steeves' Landing wharf to date has been \$3,398.

GRAND ANSE.

The Grand Anse, Gloucester county, breakwater was begun in 1876.

In 1908, the construction of an extension to the shore was begun, consisting of cribwork 177½ feet long (as built) and 15 feet wide and a trestle 111.5 feet long (as built) and 15 feet wide to carry the roadway at an incline of 1 in 12 from the level of the breakwater to the bank. The trestle rests for 81 feet on a cribwork foundation and for the remainder on mud sills. The cribwork was built during 1908 and the stringers laid on the outer 177½ feet. The outer 52 feet was sheathed on both sides.

The work was completed during the fiscal year 1909-10. The trestle was built, the remainder of the 177½ feet of cribwork sheathed on each side with 4-inch hardwood plank, the covering and cap were laid; 133 cubic yards of ballast were placed in the work, and a roadway approach about 50 feet long and graded.

On the original breakwater, four new ladders were placed and the old cap timbers at the ends of the several extensions were removed and plank was laid instead to give a continuous floor for teams.

Work was in progress from July 13 to 31, from August 23 to September 9, and on September 22 and 23.

The expenditure for the fiscal year 1909-10 was \$869.24.

The total expenditure to date has been \$38,346.68.

GREAT SALMON RIVER.

Great Salmon River, St. John county, is a small tidal inlet 8 miles east of Quaco. Shipments of lumber are made from this place. Spring tides rise 30 feet. A small harbour, dry at low water, is formed by the projection of a beach from the west side, a narrow opening remaining for an entrance. To keep open this entrance, a pier has been built. The original work, finished in 1906, was 180 feet long and 18 feet wide on top. An extension of round cribwork, 192 feet long, was completed by contract in 1908.

During 1909-10, the original work was raised to the level of the new, two tiers of cross-ties and one of face timbers being used for this purpose. Five rows of stringers extend for 155 feet. At the upper end of the work, where some scouring had taken place, three rows of face timbers and two of cross-ties were inserted, secured and afterwards protected with brush and stone. Work was commenced on July 9 and completed on September 17, 1909.

Expenditure for fiscal year ended March 31, 1910, is \$1,451.31.

HARVEY BANK.

Harvey Bank, Albert county, with a population of 600, is situated on the Shepody river, a tidal reach of the estuary of the Petitcodiac. About 40 vessels per annum arrive at the port, taking away hay, butter and other farm products.

Spring tides rise 41 feet.

On December 21, 1908, a contract was let for the construction of a cribwork extension to Dow's wharf (which has been acquired by the department), consisting of an approach, 14 feet long and 20 feet wide, and a pier-head 40 by 30 feet.

During 1909-10, the contract work was built, and repairs were made to the approach. They consisted of ballast floors, ballast, stringers, covering, cap, ring bolts, &c.

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The contract work was begun April 26, 1909, and completed June 15, 1909, while the repairs were begun August 3 and completed August 31, 1909.

Expenditure for fiscal year ended March 31, 1910, is \$5,038.

HERON ISLAND.

In 1908, work was begun on an extension to and repairs of a provincial government wharf built in 1890. The outer 25 feet of the old wharf was removed and rebuilt and an additional block 22 by 18 feet was built to the level of the top of the stringers and half filled with ballast. The stringers on the 20 foot span between the two blocks were laid.

This outer block was moved by ice in the winter of 1908-9, and during the fiscal year 1909-10, the ballast was taken out, replaced in proper position and completed together with the span. Three similar blocks and spans were also built complete. The blocks are of round timber cribwork with 10 by 10 inch fenders, sheathed with 4-inch hardwood plank on all four sides, filled with ballast and covered with 3-inch plank. The caps are 10 by 10 inches, block stringers 10 by 10 inches, and span stringers 10 by 12 inches.

The last span and pierhead, 25 by 30 feet, remain to be built.

The work was in progress from July 16 to 31, from September 9 to 22, and from October 18 to November 12.

The expenditure for the fiscal year 1909-10, was \$1,998.82.

Total expenditure to date, \$3,994.12.

HERRING COVE.

Herring Cove is situated 11½ miles west of Cape Enragé, forming the western extremity of Salisbury bay, an indentation of the Albert coast of the Bay of Fundy. Spring tides rise 37 feet; neaps, 30 feet.

A breakwater, 215 feet long, 31 feet wide on top, and 43 feet high at the outer end, was built at this place by the department in 1873. The weather face is strongly battered and sheathed. Founded on a reef, under the lee of Matthew's head, and directed towards Owl's head, the work, trending towards the land, lies in the direction of southwest waves and affords some slight protection from undertow to craft, if beached in the extreme angle of the cove.

During 1909-10, some of the old sheathing of the work was taken off and 45 new pieces, from 5 to 30 feet in length, were laid on the sloping face. Loose sheathing was besides secured.

The work was begun October 18 and suspended on November 13, 1909.

Expenditure for fiscal year ended March 31, 1910, is \$143.75.

KOUCHIBOUGUAC.

The work at Kouchibouguac, Kent county, was begun in 1908 and consisted of building a dam to close a new gully which was forming in the low beach separating the harbour from the Gulf of St. Lawrence, and which tended to lessen the current and consequently the depth in the main entrance. The dam consisted of piles in two rows 6 feet apart, the piles being 8 feet centre to centre in the rows, holding a brush mattress 18 feet wide.

Before the mattress had been securely ballasted, the heavy storm and high tides of October 27 and 28, 1908, carried away the greater part of the brush and about 30 of the piles. The gully deepened during the winter and most of the remaining piles were bent over or washed out.

During the fiscal year 1909-10, the dam was rebuilt 604 feet long and consisting of 133 piles, of which 13 remained from last year, and mattresses about 20 feet wide covered with about 440 cubic yards of stone.

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At the beginning of the work, there was about $6\frac{1}{2}$ feet of water in the gully at high water or $1\frac{1}{2}$ feet at low water ordinary spring tides, but before it was finally closed, it had deepened at least 6 feet.

The top of the work is still from $\frac{1}{2}$ to $2\frac{1}{2}$ feet below high water for a length of 350 feet, but the sides are banking up rapidly with sand.

The work was in progress between June 14 and September 13, 1909.

The expenditure for the fiscal year 1909-10 was \$3,823.72.

Total expenditure to date \$6,312.81.

LAMEQUE.

The Lameque, Gloucester county, public wharf was begun in October, 1900, and completed in January, 1903.

During 1908, the construction of three blocks, two 25 by 30 feet and one 29 by 30 feet, were begun by day labour to form an enlargement of the pier-head and a foundation for a proposed warehouse and salt shed, and at the end of 1908 they had been built to within from 4 feet 4 inches to 7 feet 4 inches of the required height.

During the fiscal year 1909-10, an agreement was made with Arcade Landry, of Shippigan, N.B., to use the round timber on hand, 2,850 lineal feet, in building up the blocks to full height; to lay the upper ballast floor on the third block; insert the ballast on hand, 30 to 40 cubic yards; to place 33 fenders and 109 lineal feet of stringers, and to insert 45 new pieces of flooring to replace decayed planks of the original wharf; all for the sum of \$130. The work was done in August and September, 1909.

Four thousand one hundred and fifty feet B.M. of fenders were bought during the fiscal year at a cost of \$62.25, and 27,153 feet B.M. of lumber were procured for the construction of the warehouse, at a cost of \$384.68.

The expenditure for the fiscal year 1909-10 was \$741.93.

The total expenditure to date has been \$23,263.37.

LEONARDVILLE.

Leonardville is a fishing station on the eastern side of Deer island (a part of the county of Charlotte), 3 miles from Lord's cove and 2 miles from Chocolate cove. Thirty sardine boats, from 8 to 12 feet in draught, are owned at Leonardville, in the neighbourhood of which there are 60 families.

On September 13, 1909, a contract was let for the construction of a wharf 303 feet in total length, consisting of a trestle approach 143 feet long; a pile approach 120 feet long, and a cribwork pier-head, 60 by 40 feet.

By the end of 1909-10, the pier-head had been built ten tiers in height, had been sunk in place and ballasted.

Work was begun January 17, and was in progress on March 31, 1910.

Expenditure for fiscal year ended March 31, 1910, is \$2,533.

L'ETÉTÉ.

At L'Eteté, situated in Charlotte county, is a minor channel or passage from the Bay of Fundy into Passamaquoddy bay. At this fishing settlement, 9 miles from St. George, the provincial government built a slightly constructed wharf at which a small local steamer touches. To the pier head of this wharf, the department made an addition.

In 1909-10, part of the covering of the wharf was renewed, and part was re-spiked. Then fencing along the approach and around the opening for the steps was rebuilt. New stairs were placed. Eight new fenders and two ladders were bolted to the pier head. The bents of the approach, 15 in number, were straightened and braced and

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50 lineal feet of new stringers were laid. The freight shed was partly shingled and the embankment at the shore was repaired.

Work was begun September 3 and completed September 25, 1909.

Expenditure for fiscal year ended March 31, 1910, is \$189.86.

LORNEVILLE.

Lorneville, formerly Pisarinco cove, is a well known fishing settlement 10 miles west of St. John, in the county of that name. At this place there are 55 boats.

On February 10, 1909, a contract was let for the construction of a combined breakwater and wharf of solid cribwork, 400 feet long and from 24 to 32 feet wide.

The work was just completed, when, on December 14, 1909, during a heavy storm, the pier head was displaced and settled considerably in the bottom.

Work was begun on April 26 and completed on December 14, 1909. (Except four fenders.)

Expenditure for fiscal year ended March 31, 1910, is \$29,340.86.

LOWER CARAQUET.

A contract for a public wharf at Lower Caraquet, Gloucester county, 7 miles east of Caraquet station, was entered into on March 17, 1909, with Honore Duguay, of Caraquet. The contract price is \$36,500.

The wharf is to be 2,600 feet long and composed of a shore block 550 by 20 feet, 43 blocks, spaced 20 feet apart, 25 by 20 feet, one block 25 by 30 feet, one span 20 by 30 feet, and a pier-head 50 by 30 feet.

Construction was begun on June 21, 1909, and closed down for the season on November 24, at which date the cribwork was completed to the end of the 14th block and the stringers, covering and fenders (except a few short lengths) were placed for the same distance. 700 lineal feet of cap timber was laid.

The expenditure for the fiscal year was \$13,838.

Total expenditure to date \$13,978.

LOWER NEWCASTLE.

During the fiscal year 1909-10, about 150 pieces of 4-inch creosoted plank were driven about 3 feet into the bottom and bolted around the pierhead of the wharf. Four fenders were placed. A small quantity of ballast was inserted and parts of the top were painted with carbolineum.

The wharf, which is 228 feet long, including the approach, had been under construction by day labour during 1907-8, and was completed between June 14 and the 30, 1909.

The expenditure for the fiscal year amounted to \$100.58.

The total expenditure to date has been \$4,949.37.

MACE'S BAY.

Belas Basin, Charlotte county, a cove on Mace's bay, 23 miles, as the crow flies, west of St. John, but farther by road, is defended from the sea by a beach 1,700 feet long, and is dry at low water.

During 1909-10, the pier-head, a block of round cribwork 32 feet long and 17½ feet wide, was completed. A ladder was placed on one side, and mooring posts have been placed at the corners.

Work was begun on September 10, 1909, and completed March 30, 1910, having been carried on during part of September, October and November, 1909, and March, 1910.

Expenditure for fiscal year ended March 31, 1910, is \$393.76.

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MILLS POINT.

On February 6, 1908, the department entered into a contract with Mr. A. F. Fawcett for the construction of a wharf at Mills point, Northumberland county, consisting of an approach 20 by 135 feet, 25 spans 20 by 20 feet, 24 blocks 20 by 25 feet, one block 30 by 25 feet, one span 30 by 20 feet, and a pierhead 30 by 50 feet.

Construction was begun on April 15, and at the end of March, 1909, there remained to complete the wharf: Placing 3 ladders and 40 short lengths of fenders, trimming off projecting timbers, bolting fenders and sheathing and painting parts of the work with carbolineum. This was done by day labour in August and September, 1909, and charged to the balance due the contractor.

160 bolts were driven in the fenders and 1,100 in the sheathing, and three pieces of sheathing carried away by the ice were renewed.

The expenditure amounted to \$175, of which \$138.50 was for the day labour works.

The total expenditure to date has been \$20,663.68.

MONCTON.

A contract for an extension of the public wharf 160 feet long was entered into with A. F. Fawcett on July 8, 1908.

As a change was desired in the level of the bed as shown on the contract plan and as other improvements were suggested, new contract plans were called for in 1909, and A. F. Fawcett having given up his last year's contract, the work was let on November 11, 1909, to Oscar and Warren Downey, of Curryville, Albert county, N.B.

Between March 17 and April 20, 1909, about 471,000 feet, B.M. of lumber, and 246 ballast poles, supplied by A. F. Fawcett, were assorted, inspected, surveyed and piled, at a cost of \$321.62, of which \$217.22 was incurred during the fiscal year 1909-10.

The new contractors took over the materials on hand and an estimate in their favour amounting to \$6,576.45, for these materials, was forwarded on November 19, 1909.

The expenditure for the fiscal year 1909-10 was \$7,093.67.

The total expenditure to date has been \$7,398.37.

NEGROPOINT.

Negropoint, a breakwater, 2,250 feet long, built of large blocks of random stone, extends almost two-thirds of the distance across the west channel, and partially protects St. John harbour. By marine dynamometer, the force of the waves has been found to be 4,000 lbs. per square foot and upwards; hence the stones of the work are often dislodged by the sea, and frequent repairs are required. These consist principally of large concrete blocks, averaging 30 cubic yards each, made in place. The preparation of a foundation for these blocks consists in removing the large, random stone of which the breakwater is generally composed, putting in the false work, and in placing the stones removed from the foundation around the concrete after it has been built.

During 1909-10, 38 blocks, aggregating 1,282.2 cubic yards of concrete, were made in position; 3,018 barrels of sand, 1,439 barrels of cement and 802 cubic yards of granite were purchased. The granite was besides almost entirely reduced to the size required for concrete.

Work was begun on June 25, and completed on December 31, 1909.

Expenditure for fiscal year ended March 31, 1910, is \$20,604.83.

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NEGUAC.

The Neguac, Northumberland county, public wharf, 1,180 feet long, was built in 1892-94.

During the fiscal year 1909-10, \$5 was expended in procuring and placing a new mooring post in the pier-head.

Total expenditure to date \$13,821.61.

NORTH HEAD, GRAND MANAN.

At Flagg Cove, near North Head in Grand Manan, an island forming part of the county of Charlotte, and lying 24 miles south of St. Andrews, but double that distance from St. John, a wharf, known as Dixon's, was purchased by the department, and has since been repaired by day labour, and extended by contract.

The work done by day labour, during the fiscal year, was as follows:—

The repairs to the trestle approach were completed and new covering was laid for a length of 46 feet. The remainder of the approach, 55 feet long, was widened by extension to the breastwork outside. The breastwork itself, 105 feet long, was completed, and the slip was sheathed and protected by a hand-railing. Five new mooring posts and three ladders were besides placed in the work. A new block of cribwork, 101 feet long and 30 feet wide, begun in the previous year, was completed.

Two tiers of timber were added to the break, in completion of the contract work. Iron braces were added by day's labour.

Work was begun on July 6, 1909, and completed March 12, 1910.

Expenditure for fiscal year ended March 31, 1910, is \$9,132.93.

OAK POINT.

The wharf at Oak Point, Northumberland county, is 481.3 feet long and was begun on June 8, 1907, and completed on February 13, 1908.

During the fiscal year 1909-10, \$9.59 was expended in replacing two pieces of hardwood sheathing and driving 60 bolts to secure part of the sheathing which had been loosened by the ice.

Total expenditure to date, \$8,412.42.

PARTRIDGE ISLAND (ST. JOHN HARBOUR).

The submerged pipe line, laid across the west channel of St. John harbour from Fort Dufferin to Partridge island, to supply water to the quarantine and lighthouse stations, received attention during the year.

On the island, two waste pipes, respectfully 141 and 150 feet in length, were laid, and two new valves were set. The road over the rock, for hauling materials and supplies of all kinds, whether for water works, hospital buildings, or those belonging to the Marine and Fisheries, from the wharf to the summit of the island, being in a dangerous condition, was improved by blasting and filling in to a width of 12 feet, for a distance of 1,200 feet. Four hundred and fifteen lineal feet of pipe were uncovered, examined and repacked to search for leaks. A stopcock was replaced.

The submerged pipe was examined by a diver during the year, and several leaks were discovered and repaired under water.

Work on Partridge island was begun, September 28, 1909, and completed March 8, 1910.

Work on submerged pipe was begun June 14, 1909, and was in progress on March 31, 1910.

Expenditure for fiscal year ended March, 1910, is \$6,228.98.

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PETIT ROCHER.

The breakwater at Petit Rocher, Gloucester county, was begun on March 18, 1905, and completed on November 21, 1908.

The inner 450 feet consists of a rubble mound with a superstructure of cross-ties, stringers and plank, and a concrete curb along the outer face.

The main breakwater, 210 feet long on the outer face, and pier-head, 209 feet long on the outer face, are of close-faced cribwork 30 feet wide on top.

A storm of September 28-30, 1909, having damaged the stone slope next the cribwork portion, a concrete block about 18 feet long, 5 to 7 feet high and 5 to 7 feet wide, containing about 26 cubic yards, was built in the middle of November, 1909, at the inner end of the cribwork, and about 50 cubic yards of large boulders of the slope carried shorewards by the storm were placed around it.

Before the concrete block had fully set, a storm on November 26, accompanied by an unusually high tide, destroyed the block and made a gap in the stone embankment about 36 feet long and 30 feet wide on top and 18 feet in extreme depth. About 23 cubic yards of stone were placed in the gap, but a storm on December 16 increased the damage, undermining the superstructure and carrying away the concrete curb for a length of 44½ feet. 68 cubic yards of stone were placed in the space under the superstructure during December as a temporary protection.

The derrick on the wharf was broken during the year by a runaway freight car and was repaired and replaced at a cost of \$12.50.

The expenditure for the fiscal year was \$467.66.

The total expenditure to date has been \$63,839.79.

PINK ROCK.

On July 22, 1909, a contract was entered into with Mr. T. P. Charleson for the construction of an extension to the Pink Rock, Westmorland county, wharf and a detached breakwater.

The extension will consist of an approach 47 feet long and 28 feet wide on top and a pierhead placed at right angles to the approach, 75 feet long and 28 feet wide on top. The breakwater will be 100 feet long and 28 feet wide on top, and will leave an opening 110 feet wide between it and the wharf. The whole is to be built of round timber cribwork filled with ballast and the outside faces of the pier-head and breakwater are to be sheathed with 6-inch hardwood plank.

On account of the difficulty of procuring timber in the summer and the danger of leaving the work uncompleted during the winter, the work was not begun.

The contract price is \$10,440.

The total expenditure to date has been \$4,196.45.

POINT DU CHENE.

The works at Point du Chene, Westmorland county, consist of two breakwaters, an inner and an outer, each 600 feet long, with an opening between of 80 feet, and a ballast wharf (so-called) 200 feet long connecting the outer breakwater with the Intercolonial Railway wharf. They were begun in 1875 and have been rebuilt or repaired at various times.

During the fiscal year 1909-10, one creosoted and one native timber waling, 10 by 12 inches, was placed along the outer face of the 'ballast wharf,' 185 feet long, which was then sheathed with 6-inch creosoted piles, procured in 1908. The old covering and stringers were removed and the wharf was filled with 495 cubic yards of ballast. The track was then relaid on the outer breakwater, a derrick was placed on a flat car rented from the Intercolonial railway at \$1 per day, and the rough stone talus along the outside of the outer breakwater was relaid with a smooth slope for a

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length of 366 feet. Four tiers of timber were laid on a small block which had been built at the shore end of the breakwater to retain the stone slope, and the block was ballasted; 606 cubic yards of large and mixed stone were procured and delivered at the ballast wharf and during the winter were hauled to the inner breakwater to form a slope along its outer face for a length of 390 feet; 11,000 feet B.M. of square timber was procured to complete the repairs of the ballast wharf.

The work was in progress between June 15 and December 22, between December 28 and February 12, and from March 14 to 20.

The expenditure for the fiscal year amounted to \$5,000.71.

The total expenditure to date has been \$128,335.39.

QUACO.

St. Martins, or Quaco, St. John county, as the village is indifferently called, situated 32 miles east of St. John, is the terminus of a branch railway and the seat of several sawmills. Inside low water mark, a pier of close-faced cribwork was built on either side of the outlet of a moderate stream, in order to give shelter to vessels at high water. The pier on the east side was originally 310 feet long and 30 feet wide, with a head 60 by 39 feet; while the west pier is 302 feet long and 20 feet wide at the top of a slope of 1 to 1. Spring tides rise 30 feet and leave the work dry at two-thirds ebb, receding from them one-quarter of a mile at low water.

On December 28, 1908, a contract was let for the extension of the east pier for a distance of 239 feet on the centre line, and on April 22, 1909, another contract was let for the reconstruction of that part of the old work, 60 feet in length, which had been damaged by the storm of February, 1908.

These two contracts were completed during the fiscal year.

Work on the first contract was begun March 1, 1909, and completed February 7, 1910.

Work on the second contract was begun July 16, 1909, and completed November 2, 1909.

Expenditure for fiscal year ended March 31, 1910, is \$39,328.75.

RICHIBUCTO.

The Richibucto, Kent county, public wharf, built and formerly owned by the municipality, was acquired during 1908-9 by the department and partly repaired in that year, about 177 feet of the approach being rebuilt except for the upper tier of cross ties, the cap and the gravel surfacing.

During the fiscal year 1909-10, the rebuilding of the approach was continued. The section begun last year was completed, 26 cross ties and the cap on the south side being laid and the surface gravelled. About 220 feet of the old approach was removed and 204 feet of new cribwork built. The new cribwork is 30 feet wide and about 9 feet high, constructed of round timber with gravel surfacing. A temporary cribwork, about 18 feet long, was built in the gap at the shore end to allow the use of the railway siding on the wharf.

The work was in progress between June 15 and August 21, and from September 6 to 8.

The expenditure for the fiscal year was \$2,982.31.

The total expenditure to date on the Richibucto government wharfs has been \$13,307.43.

RICHIBUCTO CAPE.

During 1908-9, the construction of a breakwater was begun by day labour to give protection to the many fishing boats, local and otherwise, which operate on the fishing grounds off the Cape. About \$25,000 to \$30,000 worth of fish are caught annually

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by the boats from the neighbourhood, and in the five years, 1900-4, 19 boats valued at \$100 each were lost through lack of shelter.

A roadway to the proposed work was excavated in 1908 and about 1,040 cubic yards of stone were quarried for the work. The approach to the breakwater, consisting of a stone embankment 15 feet wide on top with slopes of 2 to 1 on the outside and 1 to 1 on the inside, was built for a length of about 30 feet.

This was continued during the fiscal year 1909-10, to a total length of 241 feet, of which 177 feet is 15 feet wide on top, the next 20 feet increasing in width to 20 feet on top, which is continued for the outer 44 feet. A superstructure of cross ties, stringers, 3-inch flooring, and 10 by 12-inch caps, was built for the whole length.

Storms, several times, damaged the work, causing considerable expense in rebuilding the slopes and therefore at the outer end a timber crib was built, 29 feet long by 20 feet wide, as a core for the embankment.

The grading of the roadway was completed by sloping the shale rock on the north side for a length of about 75 feet and height of about 10 feet.

The work was in progress between May 12 and July 24, from August 10 to September 25, October 4 to 28, and November 24 and 25.

The expenditure for the fiscal year amounted to \$4,778.73.

The total expenditure to date has been \$9,965.05.

RICHIBUCTO BEACH.

The Richibucto Beach, Kent county, breakwater, together with a proposed work on the south of the entrance, is intended to concentrate the current and thus deepen the entrance to Richibucto harbour. The works were begun in 1873.

During the fiscal year 1909-10, \$13 was expended for storage and cartage of the tools, rope, chain and other materials belonging to the department and used in the Richibucto beach works, which, if allowed to remain at the beach, would probably have been stolen.

About 30 piles belonging to the department were peeled and piled to prevent decay, and about 1,500 cubic feet of brush were placed about the government buildings on the beach to gather the sand which was being carried away by the wind to such an extent that the buildings were in danger of overturning, all at a cost of \$13.

The expenditure for the fiscal year was \$26.

The total expenditure up to date has been \$149,828.22.

ST. ANDREWS.

St. Andrews, in the county of Charlotte, is a terminus of a branch of the Canadian Pacific railway, and lies, by water, 50 miles west of St. John. The town is situated at the mouth of the St. Croix, on the point of a peninsula stretching into Passamaquoddy bay, a deep sheltered inlet of the Bay of Fundy. In the summer months, St. Andrews is a favourite watering place, frequented by tourists and yachtsmen, and also by fishermen.

On March 8, 1909, a contract for the extension of the public, or what is known as the 'Market wharf,' was signed. This extension consists of a pile approach, 468 feet long, and a pier-head 36 by 70 feet.

Work was begun on June 1, 1909, and by the end of the fiscal year was approaching completion.

Work was begun on June 1, 1909, and was suspended for winter on December 16, 1909.

Expenditure for fiscal year ended March 31, 1910, is \$16,782.

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ST. GEORGE.

St. George, Charlotte county, a small but flourishing town, situated at the head of tide on the Magaguadavic river, is chiefly noted for lumbering and for the numerous monumental works established there to manufacture the red granite found in the neighbourhood. On account of the fine water power, due to the great fall immediately at the village from fresh to tidal water, a pulp mill has been erected.

During 1909-10, fenders were placed on the front and end of the wharf; a ladder was put in position, and a quantity of timber and ballast was procured for next year's work.

Work was begun on July 2, 1909, and ceased March 29, 1910.

Expenditure for fiscal year ended March 31, 1910, is \$1,424.16.

ST. JOHN HARBOUR.

For a description of St. John harbour, see page 95 of the Public Works report for the year 1908.

Ballast wharf.

Dredging was continued to obtain a depth of 30 feet below low water; 6,587 cubic yards of mud and clay were removed. On account of the freshet, work was suspended on April 26, 1909.

The expenditure for the fiscal year ended March 31, 1910, is \$2,117.10.

Beacon bar.

Dredging was done for the purpose of extending the winter port berths to the southward of Sand point. Under the present arrangement, some ten berths are to be built to a depth of 32 feet below low water. Quantity of material removed, was 594,343½ cubic yards of mud and gravel at a cost of \$240,715.85.

Sand Point Basin.

Dredging was done cleaning up the Sand Point basin to a depth of 33 feet at low water. Quantity of material removed was 159,251 cubic yards of silt and clay, and 32,847.1 yards of rock. Work was commenced on June 30 and completed on December 9.

The expenditure for the fiscal year ended March 31, 1910, is \$15,234.60.

Early in September, the dredge *Fielding* began work covering the portion of the basin south of the South Rodney wharf, to give a uniform depth of 33 feet at berths 5 and 6, and in the channel to within 20 feet of the face of the wharf forming berths 2, 3 and 4. Quantity of material removed was 43,205 cubic yards of material. Work was completed on October 20.

Sand Point wharf extension.

The construction of the superstructure, under contract, is completed, and the flooring and trestle work are completed for about 500 feet on the northern side of the work; the pile driving was commenced on September 8 and was completed on April 6, 1910.

The expenditure for the fiscal year ended March 31, 1910, is \$190,332.62.

The total expenditure on St. John harbour during the fiscal year ended March 31, 1910, is \$455,549.88.

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ST. JOHN RIVER AND TRIBUTARIES.

For description of the upper river, see page 97 of the Public Works report for the year 1908.

ANDOVER TO CARLETON COUNTY BOUNDARY LINE.

The work on the St. John river between Andover and Carleton county boundary line was divided into two portions, each in charge of a separate officer; one working from August 23 to 30, and expending \$56.22, while the other worked from October 9 to 30, and expending \$152.49. Eight boulders and two rocks were blasted, measuring, in all, 58 cubic yards.

BEAVER BROOK (VICTORIA COUNTY).

This work was commenced on November 4, and completed on 27th of same month. The channel was cleared for a distance of 6 or 7 miles and a new channel was cut 20 rods long.

The expenditure amounted to \$270.25.

BERUBI (MADAWASKA COUNTY).

A breakwater, 100 feet long, 12 feet high, and 10 feet wide, bolted with wrought iron bolts, was constructed. Work was commenced on September 12 and was completed on September 28.

The expenditure amounted to \$191.31.

BLUE MOUNT BEND (VICTORIA COUNTY).

A breakwater, 180 feet long, 20 feet wide and 7 feet high, well loaded with stone, was constructed; work commenced on August 16, and was completed on September 25.

The expenditure amounted to \$384.13.

CROSS LAKE (MADAWASKA COUNTY).

A channel was cut 20 rods long, and the tow-path was improved; work was done between August 16 and 31.

The amount expended was \$196.50.

EMERSON'S FALLS (MADAWASKA COUNTY).

Two ledges were blasted, 23 by 4 by 6½ feet and 25 by 4 by 8 feet, containing about 22 and 29½ cubic yards respectively; in addition to the above, seven large rocks were blasted aggregating 34 cubic yards. Work was commenced on October 11 and completed on October 28.

The expenditure amounted to \$109.90.

GRAND RIVER (MADAWASKA COUNTY).

The channel was cleared for a distance of 20 miles by the removal of boulders and obstructions, the tow path was also cleared. Work commenced on August 10 and was completed on September 4.

The expenditure amounted to \$199.

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GRAND FALLS, ANDOVER (VICTORIA COUNTY).

From 1 mile below the falls as far as Black rapids, a distance of 6 miles, rocks were blasted and 124 cubic yards were removed. Work commenced on August 4 and was completed on August 11.

The expenditure amounted to \$199.60.

GREEN RIVER (MADAWASKA COUNTY).

The river was cleared for a distance of 8 miles up from the mouth; about 120 cubic yards of rock were removed, together with numerous stumps of trees. Work commenced on October 14 and was completed October 30.

The expenditure amounted to \$169.25.

GRONDINS (MADAWASKA).

A breakwater, 145 feet long, $4\frac{1}{2}$ high and 10 feet wide, was constructed. Work was commenced on August 16 and was completed August 24.

The expenditure amounted to \$76.35.

GUERRETTES (MADAWASKA COUNTY).

A breakwater, 120 feet long, 12 high and 10 feet wide, was constructed. Work commenced on October 4 and was completed on October 9.

The expenditure amounted to \$201.45.

GUIMONDS (MADAWASKA COUNTY).

A breakwater, 145 feet long, 8 wide and 5 feet high, was constructed. Work commenced on September 3 and was completed September 9.

Total expenditure amounted to \$61.05.

LITTLE RIVER, GRAND FALLS (VICTORIA COUNTY).

From about 9 miles above the mouth and for a distance of 3 miles up, the river was improved; about 11 miles above the mouth, a bend in the river was straightened, some ledge rock and stumps and trees were removed. Work commenced on September 6 and was completed on September 11.

The expenditure amounted to \$99.50.

LITTLE RIVER, ST. FRANCIS (MADAWASKA COUNTY).

Two breakwaters were constructed, one 100 feet long, 12 wide and 3 to 6 feet high, and the other, 50 feet long, 12 wide and 6 feet high. Work commenced on June 28 and was completed July 6.

The expenditure amounted to \$151.28.

NICTAU LAKE (VICTORIA COUNTY).

The channel in Caribou brook, at the head of Nictau lake, was cleared of logs and obstructions for a distance of $\frac{3}{4}$ of a mile. Work commenced on August 9 and was completed on August 25.

The expenditure amounted to \$151.

OTTALLIC STREAM (VICTORIA COUNTY).

The stream was cleared of boulders, stumps and old trees, and about 20 cubic yards of rock were blasted. Work commenced on 13th and was completed on November 26.

The expenditure amounted to \$81.25.

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SERPENTINE RIVER (VICTORIA COUNTY).

The channel was cleared by removing boulders and obstructions. Work commenced on 16th and was completed on November 30.

The expenditure amounted to \$300.76.

SISSON BROOK (MADAWASKA COUNTY)

Some 120 boulders, measuring about 100 cubic yards, were blasted and removed, obstructions were also removed from the channel. Work commenced on November 3 and was completed on November 11.

The expenditure amounted to \$100.

TROUT RIVER (MADAWASKA COUNTY).

A boulder was blasted, 12 feet in diameter, also several small ones, and obstructions were removed from the river for a distance of 10 miles. Work commenced on 1st and was completed on July 15.

The expenditure amounted to \$99.50.

TURNERS (VICTORIA COUNTY).

A breakwater, 150 feet long, 18 feet wide and 6 feet high, well loaded with ballast, was constructed. Work commenced on July 16 and was completed on November 12.

The expenditure amounted to \$300.

TWEEDDALES (VICTORIA COUNTY).

A breakwater, 140 feet long, 7 feet high and 18 feet wide, loaded with stone, was constructed. Work commenced on 13th and was completed on October 22.

The expenditure amounted to \$399.78.

WAPSKEHEGAN RIVER (VICTORIA COUNTY).

Two breakwaters were constructed on this river: one, 40 feet long, 6 feet high and 8 feet wide, and the other, 60 feet long, 6 feet high and 8 feet wide; these breakwaters are located 24 miles from the mouth of the river. About 30 cubic yards of solid rock and 36 boulders were blasted, and a few obstructions were removed from the river. Work commenced on November 17 and was completed on March 31, 1910.

The expenditure amounted to \$289.75.

WRIGHTS (VICTORIA COUNTY).

A breakwater, 150 feet long, 6½ feet high with four bays, was constructed. Work commenced on August 23 and was completed on September 11.

The expenditure amounted to \$296.55.

The total expenditure on River St. John and upper tributaries, for the fiscal year ended March 31, 1910, was \$5,445.19.

INLAND NAVIGATION.

Inland navigation extends from Fredericton to Woodstock and is described on page 96 of the Public Works report for 1908.

FREDERICTON-HAWKESHAU (YORK COUNTY).

On this portion of the river, the hydrographic survey, begun during the fiscal year 1908-9, was continued between Fredericton and Hawkeshaw. Soundings were

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taken from the head of Russel bar to Springhill, a distance of 2 miles. Both sides of the river have been traversed, and base lines and permanent bench marks established.

Surveys have been made at the following bars and islands:—Tennant bar, McLaughlin island, Clement island, Ross island No. 2, Ross island No. 1, Dunphy island, Murreys island, Nevers island, McClary bar, McGibbon island No. 2, Sandy McGibbon island, Parsnip island, McGibbon island No. 1, Harts island, Hawkins island, Russell bar, Savage island, Sugar island, Keswick island, Shore island, Wheelers bar, Little Bear island, Great Bear island, Hog island, Coac bar.

Work commenced on July 14 and was suspended on December 23.

The expenditure, during the fiscal year, amounted to \$3,521.71.

TIDAL NAVIGATION.

For a description of the tidal navigation of the River St. John, see page 96 of the Public Works report for 1908.

BARKERS (SUNBURY COUNTY).

A high water wharf was constructed, consisting of a pier-head 100 feet long and 31 feet 8 inches wide, with an approach of cribwork 20 feet long and a further approach, of stone and earth, 45½ feet long. The work is close-faced with a slip 12 by 9 feet.

A protection pier was also built on the old low water wharf, 8 by 15 feet. There is a depth of 20 feet, at high water, at the face.

The expenditure for the fiscal year, ended March 31, 1910, is \$3,925.67.

BROWN'S FLATS (KINGS COUNTY).

At Brown's Flat wharf, the work consisted of widening and rebuilding the roadway and approach to the low water wharf, making of it a high and low water wharf. The structure is now 62 feet wide and 15 feet high on the face, with a depth of 12 feet at low water. The roadway rebuilt is 162 feet long and 62 feet wide. One-half the cost was contributed by the provincial government.

The expenditure by this department for the fiscal year ended March 31, 1910, is \$998.50.

BURTON COURT HOUSE (SUNBURY COUNTY).

The construction of a low water wharf was commenced on November 3, suspended on 30th and resumed on January 1. The wharf consists of a pier-head 40 feet 10 inches square, with a cribwork approach 102 feet long and 17 feet 8 inches wide on top, together with a further approach of stone and earth fill 37 feet long, not yet constructed. The depth at the face of the work, at low water ordinary summer level, is seven feet.

The expenditure for the fiscal year ended March 31, 1910, is \$3,720.78.

CHASES POINT (QUEENS COUNTY).

Some fenders and a portion of the cap were required to complete the wharf built last fiscal year, 1908-9, and the roadway or approach of earth was partially raised. A plate of sheet iron was placed at the outer corner as a protection from running ice and logs. At the face of the work, there is a depth of 8½ feet at low water ordinary summer level. Work was commenced on August 3, and was completed on 31st of same month.

The expenditure for the fiscal year ended March 31, 1910, is \$194.01.

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DOUGLAS HARBOUR (QUEENS COUNTY).

At Douglas harbour, an old wharf was rebuilt, making a structure 63 feet wide on the face; the northwest side being 57 feet long, and the southeastern side 45 feet, with a roadway 313 feet long. The wharf is $17\frac{1}{2}$ feet high, with 9 feet depth of water, at low water, at the face.

One-half the cost was contributed by the provincial government.

The expenditure by this department for the fiscal year ended March 31, 1910, is \$624.70.

HAMPTON (KINGS COUNTY).

The departmental dredge *New Brunswick* commenced work on April 30, suspended on May 19, recommenced operations on May 23 and worked until June 4, making a channel 36 feet wide to a depth of 9 feet at low water summer level; 24,260 cubic yards of clay, mud, sand and logs were removed.

When this work below the highway bridge on the Kennebecasis river near Hampton is completed, it will be 75 feet wide.

IRON BOUND COVE (QUEENS COUNTY).

A low water wharf was constructed, 40 feet 10 inches long and 41 feet 3 inches wide with an approach, of stone and earth fill, 44 feet long and 17 feet 8 inches wide on top. At the face of the wharf, there is a depth of 9 feet at low water ordinary summer level.

Work was commenced on January 31, and was completed on March 31.

The expenditure for the fiscal year ended March 31, 1910, is \$798.80.

JENKINS COVE (KINGS COUNTY).

The dredge *New Brunswick* dredged in front of the wharf to a depth of 9 feet at low water ordinary summer level. The material near the wharf was too hard for this dredge to remove.

Work was commenced on October 24, and was completed on November 19, during which time 13,970 cubic yards of clay were removed.

LONG ISLAND (KINGS COUNTY).

An approach to the pier was constructed; it is 210 feet long and 12 wide, filled with brush and ballast with one foot of gravel on top. Work was commenced on September 7, and was completed on October 23.

The expenditure for the fiscal year ended March 31, 1910, is \$298.07.

LOWER JEMSEG (QUEENS COUNTY).

This wharf, consisting of an 'L' 40 feet 10 inches square, with an approach of cribwork 95 feet long, and a further approach of stone and earth fill, 219 feet 5 inches long, extending to the highway. Work was commenced on this high water wharf on October 19, and is complete with the exception of some little work on the approach. There is a depth of 8 feet 4 inches, at low water ordinary summer level, at the face.

A right of way from the public road to the wharf was obtained for the sum of \$1.

The expenditure for the fiscal year ended March 31, 1910, is \$2,246.13.

MATHERS ISLAND (KINGS COUNTY).

A cribwork approach, 89 feet 4 inches long and 10 feet wide with an extension of stone and earth fill, 92 feet long and 10 feet wide, was constructed; work was commenced on October 7 and completed on November 24.

The expenditure for the fiscal year ended March 31, 1910, is \$408.67.

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M'ALISTERS (QUEENS COUNTY).

A low water wharf consisting of a pier-head 40 feet 10 inches square, with a timber cribwork approach, 60 feet 2 inches long, and a further approach, of stone and earth fill, 25 feet 6 inches long and 17 feet 8 inches wide on top, was constructed.

The depth of water at face, low water ordinary summer level, is 8 feet 4 inches.

Work commenced on February 14 and was practically completed at the end of the fiscal year.

The expenditure for the fiscal year ended March 31, 1910, is \$1,167.53.

NAUWIGEWAWK (KINGS COUNTY).

The dredge *New Brunswick* cut a channel, 30 feet wide and 5 feet below low water level, to enable logs to be brought from the pond to Wanamaker's mill. Work was commenced on May 10, and was completed on 22.

The quantity of material removed was 1,050 cubic yards of mud.

NEWCASTLE (QUEENS COUNTY).

A high level wharf was constructed, consisting of a pierhead 40½ feet square, with an approach of cribwork 60 feet long and an extension, of stone and earth fill, 34 feet long.

There is a depth of 13½ feet, at high water, at the face.

Work was commenced on January 8, suspended on 21st, and resumed on March 21, when the wharf was practically completed.

A right of way, from the public road to the wharf, was obtained for the sum of one dollar.

The expenditure for the fiscal year ended March 31, 1910, is \$1,083.79.

OROMOCTO (SUNBURY COUNTY).

A roadway of stone and brush fill was constructed to the wharf built last year, 1908-9.

The wharf was sheathed on the upper side for a length of 58 feet, with 3-inch sheathing, and 22 fenders were placed on the lower side of the wharf. Work was commenced on May 1 and was completed on September 8.

The expenditure for the fiscal year ended March 31, 1910, including \$200 paid for a right of way from the public road to the wharf, is \$1,203.49.

OROMOCTO SHOALS (SUNBURY COUNTY).

A channel, 18,400 feet long, 225 wide and to a depth of 11 feet at low water ordinary summer level was dredged between May 24 and August 5. The quantity of material removed was 56,380 cubic yards of sand and gravel.

The expenditure for the fiscal year ended March 31, 1910, is \$28,536.75.

ROTHESAY (KINGS COUNTY).

Repairs, consisting of the replaing of fenders on the lower corner and reconstructing part of the upper face timbers and cap, were made to the wharf. This work was commenced on April 1 and completed April 9.

ST. JOHN TO FREDERICTON.

Some 267 snags, consisting of sunken logs and trees, were removed from this portion of the St. John river and hauled up on Vineent island above freshet mark. Work commenced on July 19 and was completed on October 6.

The expenditure for the fiscal year ended March 31, 1910, amounted to \$917.58.

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A roadway, 540 feet long and 20 feet wide was constructed, together with an approach, of stone and earth fill topped with gravel, 50 feet long; two small culverts were built for drainage. Work was commenced on October 1 and completed on October 28.

The expenditure for the fiscal year ended March 31, 1910, is \$276.85.

SALMON RIVER (QUEENS COUNTY).

Sunken logs and trees were removed from the bed of the river between Chipman and the head of Grand lake. Work was commenced on June 22 and completed July 16.

The expenditure for the fiscal year ended March 31, 1910, is \$50.

SCOTCHTOWN (QUEENS COUNTY).

A high and low level wharf was constructed, consisting of a pierhead, 40 feet 10 inches square, and a cribwork approach, 199 feet 7 inches long, built on a ramp, with a small block, 20 feet long and 25 feet wide, built level, and a further approach, of stone and earth fill, 50 feet long and 17 feet wide on top. There is a depth of 6 feet at low water, ordinary summer level, at the face.

Work was commenced on November 10, suspended on 26th, recommenced on January 5 and at the end of the fiscal year was practically completed.

The expenditure for the fiscal year ended March 31, 1910, is \$2,782.11.

SHAMPERS (KINGS COUNTY).

The dredge *New Brunswick* made two cuts and dredged out a basin near the wharf, one cut is 1,225 feet long and the other about 2,778 feet; a depth of 9 feet for a width of 75 feet was obtained. Quantity of material removed was 76,980 cubic yards of mud, clay, stone and sand.

Work commenced on July 1 and completed on October 23.

THE RANGE (QUEENS COUNTY).

A high water wharf was constructed, consisting of a pier-head, 50 feet long and 40 feet wide, with an approach of cribwork, 40 feet long, together with a further approach, of stone and earth fill, 55 feet long. There is a depth of 14½ feet, at high water, at the face.

Work was commenced on September 16, suspended on November 18, and resumed on January 5.

The expenditure for the fiscal year ended March 31, 1910, is \$1,380.08.

YOUNGS COVE (QUEENS COUNTY).

A high water wharf was constructed, consisting of a block, 124 feet long and 23 wide, with an approach of cribwork 86 feet long and a further approach of stone and earth fill, 44 feet long. There is a depth of 14½ feet, at high water, at the face. This wharf adjoins the low water wharf.

Work was commenced on October 27, suspended on December 5 and resumed on March 1; at the end of the fiscal year, the work was almost completed.

A right-of-way from the public road to the wharf was obtained for the sum of \$50.

The expenditure for the fiscal year ended March 31, 1910, is \$2,624.23.

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ST. LOUIS RIVER.

The St. Louis river or Kouchibouguais, Kent county, enters the Gulf of St. Lawrence 7 miles north of the entrance to Richibucto harbour. The inhabitants of the parish, numbering over 2,000, live almost entirely along the river within 17 miles of the mouth, and are occupied chiefly in farming.

The St. Louis Agricultural Society purchased, about seven years ago, at a cost of \$1,600, an orange peel dredge with which a large quantity of mud, about 7,500 tons in 1904, is dug each year from the lower part of the river and used as a fertilizer. This is taken in scows to the various farms, but the old and long continued practice of dumping sawdust and other mill refuse into the river when lumbering was a flourishing industry, has practically filled the channel over about 2½ miles of what should be the navigable section and much of the mud must now be hauled by teams the extra distance.

During the past season, \$1,000 was appropriated for the improvement of the channel. The agricultural society's dredge was hired for \$13 per day, including cost of repairs, gasoline and oil, and the services of an engineer, and the work was done by day labour. 3,166 cubic yards of mud, slabs, sticks, &c., were removed over a length of 4,615 feet in digging a channel about 40 feet wide and 4 feet deep, and a number of trees, logs, &c., were hauled out with teams. These were used together with brush, stone and dredged material, in making breastworks and banks across blind channels, &c., to keep the current in the new cut.

Six hundred and eighty-five lineal feet of breastworks, 6 to 8 feet wide, were constructed of slabs and logs bolted together and covered with brush and stone, reaching generally to high water level, and 1,610 feet of rough banks were made of the sticks and other dredged material.

The work extended over a distance of 8,100 feet. There remains a distance of 5,060 feet to deep water over which about 4,060 lineal feet will require more or less dredging.

Work was in progress August 4 to 7, August 11 to September 22, October 11 to 16, and from October 26 to 30.

The expenditure for the fiscal year was \$999.95.

The total expenditure to date has been \$4,132.42, of which \$3,132.47 was expended on the St. Louis public wharf.

SEAL COVE.

Seal Cove, on Grand Manan Island, Charlotte county, about 62 miles southwest of St. John, as the crow flies, is one of the most prosperous fishing villages in the maritime provinces, and has increased and improved very much during the last five years. There are about 150 fishermen possessing 50 boats from 9 to 18 tons each. The annual value of the catch is estimated at about \$150,000. The cove is open to the strong southwest winds of the Bay of Fundy, and in the creek (dry at low water) at the upper end, where some shelter is found, there is not room enough for all the fishing boats.

To protect the mouth of the creek, a contract was signed on March 16, 1909, for the construction of a breakwater 448 feet long, measured on the outside, the width on top being 24 feet for 192 feet, and 37 feet for 256 feet.

This work was begun and completed during the fiscal year.

Work was begun on April 17, 1909, and completed on November 6, 1909.

Expenditure for fiscal year ended March 31, 1910, is \$29,546.

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SHIPPIGAN GULLY.

Shippigan gully, Gloucester county, a passage between Shippigan island and the mainland, is much used by fishing vessels, &c., in passing from Bay Chaleur to the Gulf of St. Lawrence.

When the works were started in 1875, the channel at the gully had a depth of only $3\frac{1}{2}$ feet at low water, but the construction of breakwaters from each side and dams and breastworks on the low beaches to confine the water in one channel, increased the depth to $6\frac{1}{2}$ feet in 1898 and 8 feet in 1904.

During 1908, a dam was built inside the entrance across what was called the 'Little Channel' to keep the water in a channel newly dredged across the flats.

During the fiscal year 1909-10, slight repairs were made in this dam by distributing the ballast along the top, sawing off projecting ends of piles, &c.; 75 loads of gravel were hauled and placed about the government building on the east beach where the wind had blown away the sand, and a block was built to form a solid groyne at an angle of the breastworks inside the harbour, 150 feet west of the lobster hatchery, where the harbour ice strikes with great force. The block will throw the channel further out from the works and prevent their being undermined and tend to deflect the current into the new dredged channel. It is also useful as a landing pier for the lobster hatchery.

The block is formed of four rows of main piles, 52 in all, 6 feet centre to centre, the rows being 5 feet centre to centre, with walings, cross ties and braces of 10 by 12-inch timber, close-piled with 184 spruce and 30 square hardwood piles, and filled with brush and ballast. The block is 74 by 17 feet 8 inches inside the close-piling.

Six iron straps, 4 by $\frac{1}{2}$ -inch by 5 feet, were placed around the outer corners and 2 on a corner of a block at the west breakwater.

About 400 cubic feet of brush and 5 cubic yards of stone were placed at a low point on the breastworks west of the lobster hatchery, and 10 pieces of loose hardwood sheathing on the east breakwater were rebolted. Parts of the works on both the east and west beaches were painted with earbolineum.

The work was in progress between June 14 and October 15, and on November 9 and 10.

The expenditure for the fiscal year was \$3,499.98.

The total expenditure to date has been \$114,232.89.

SOUTHWEST MIRAMICHI.

Between June 9 and August 12, dredging was in progress by the dredge *Peter England*, under contract with Mr. Peter Engand, at a shoal about three-quarters of a mile below Millerton and about $1\frac{1}{2}$ miles above the shoal which was dredged last year. The shoal was about 1,000 feet long with a least depth of 5.2 feet. 10,690 cubic yards of sand were removed, increasing the depth to 7 feet in a channel 60 feet wide.

Between August 12 and 24, the dredge worked at the lower shoal widening the cut towards the lower end and where it was not completed last year, 1,874 cubic yards of sand were removed here.

In addition, 116 pieces of logs, stumps, and trees from 12 to 35 feet long, which were a danger to navigation and would collect ridges of sand on the bottom, were removed from the cuts.

The expenditure for the season, including inspection, was \$4,813.72.

STONEHAVEN.

The Stonehaven, Gloucester county, breakwater was begun by private parties and acquired by the department in 1878. It was extended in that year and in 1901-2, and an additional pier to shelter the harbour from the west, was built in 1905-7.

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During the fiscal year, 1909-10, the rough stone talus along the outside of the original breakwater was relaid to form a smooth slope for a length of about 158 feet of which about half was partly lain in the previous year. The inside face of the approach, 469 feet long, was strengthened with 32 new 10 by 10-inch fenders and sheathed with 3-inch hardwood plank. One new ladder was placed.

A storm of October 29, damaged or carried away a large part of the stone slope of the old pierhead and approach, also made a gap 40 feet long in the slope outside the new western pier, and undermined the blacksmith shop and tool house inside the harbour. A cribwork 30 by 12 feet by 5 tiers high was built in November to support this building.

The work was in progress between June 29 and August 24, and from November 3 to 7.

The expenditure for the fiscal year was \$1,031.33.

The total expenditure to date has been \$50,805.

TABUSINTAC.

The coast of Northumberland county between Tabusintac river and the Miramichi is skirted by a series of low sandy islands inside which is a passage used in towing about 8 to 15,000,000 feet B.M. of logs annually to Chatham, &c.

Dredging was in progress with the dredge *Excavator* in 1908 under contract with Peter England to cut a channel with about two feet at low water through the flats at the Black Lands or Tabusintac gully, which is the shoalest point of the passage.

The cut, about 25 feet wide, made in 1908, was found last spring to have deepened by the current produced and the dredging was therefore continued between September 28 and October 30, when 5,340 cubic yards of sand were removed in widening the cut, which is 800 feet long, to 60 feet, with 2 feet at low water, and starting another strip 100 feet long 40 feet wide and 2½ feet deep at low water.

The expenditure for the fiscal year amounted to \$2,058.45.

TRACADIE HARBOUR.

During the fiscal year 1908-9, work was begun on the construction of stake and brush breastworks along the beach which separates Tracadie harbour, Gloucester county, from the Gulf of St. Lawrence, to retain the sand and thus raise the beach, a considerable part of which is at present below the level of storm tides. 4,982 pickets were driven for a length of about 9,900 feet in two rows, 4 feet apart each way 480,000 cubic feet of spruce and fir brush was procured.

During the fiscal year 1909-10, this brush was placed between the pickets and about 130,000 cubic feet additional brush was used and 1,000 pickets driven to extend the breastworks a further 1,950 feet.

A raft of logs was broken up and scattered along the beach during the autumn of 1909, and in the storm and very high tide, of the first of December, these battered and broke through the breastworks in many places, especially in that section built last where the sand had not had time to accumulate.

The work was in progress between June 26 and July 19, and from August 4 to 21.

The expenditure for the fiscal year was \$1,000.57.

The total expenditure to date has been \$2,952.21.

WELCHPOOL.

Welchpool, a fishing village of 600 inhabitants, is situated on Campobello island, forming part of the county of Charlotte, 50 miles southwest of St. John in a direct line, and 14 miles south of St. Andrews.

Spring tides rise 21½ feet; neaps 18½ feet.

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A contract for the construction of a wharf of round cribwork 279 feet in total length was let on January 22, 1909. The work consists of a pier-head of trapezoidal form, 64 and 66 feet on the two longest sides, with a moveable slip, and an approach 24 feet wide of the same kind of cribwork.

This work was begun in the last fiscal year, and was completed during 1909-10.

Work was begun on January 19, and completed on October 30, 1909.

Expenditure for fiscal year ended March 31, 1910, is \$19,940.

WHITEHEAD.

Whitehead, Charlotte county, 55 miles southwest of St. John, and 35 miles south of St. Andrews, is a small island $2\frac{1}{2}$ miles off the east coast of Grand Manan and is populated by fishermen, there being 62 families on the island, owning 40 fishing boats.

On December 23, 1908, a contract was awarded for a round cribwork wharf, 200 feet in total length, consisting of an approach, 15 feet wide on top, with a pier-head 40 by 30 feet.

This work was begun and completed during 1909-10.

Work was begun on May 31, and completed on August 19, 1909.

Expenditure for fiscal year ended March 31, 1910, is \$5,107.

PROVINCE OF QUEBEC.

AMHERST.

Amherst village is situated at the eastern end of Amherst island, one of the Magdalen islands in the Gulf of St. Lawrence, which forms part of the electoral district of Gaspé.

Amherst is a port of considerable importance. A steamer, plying between Pictou, Souris and Magdalen islands, calls twice every week at Amherst.

The landing pier, commenced at Point Shea in May, 1901, was completed in 1903. The length of the pier, built of birch and maple close-faced cribwork, is 488 feet, with an approach of 550 feet leading to the pier. During the last fiscal year, a freight shed 80 by 22 feet was built on top of crib foundations built in the fiscal year 1908-9; a slip 10 feet wide was built on inside face of wharf; the flooring for a length of 50 feet was renewed, and the mooring posts, caps, walings and fenders were given two coats of red paint.

Expenditure for fiscal year ended March 31, 1910, is \$1,185.48.

ANSE ST. JEAN.

Anse St. Jean is situated on the south shore of the Saguenay river, Saguenay county, 25 miles above its mouth.

The public landing pier was commenced by the local government in 1876, and continued by federal government in the years 1879-80-1.

In 1880-1, the upper part of the pier was completed at an expenditure of \$1,091.72.

During the years 1884-5, the pier was repaired, expenditure \$94.45.

During the year 1886-7, the sum of \$865.28 was expended on the construction of a moveable slip; building an open shed, 40 by 28 feet, and renewing part of the flooring.

In 1890-1, the portion of the wharf which settled in the spring of 1889, was raised from $2\frac{1}{2}$ to 3 feet, over a length of 135 feet, and the flooring was renewed, a quantity of stone was placed in the eastern portion of the wharf and the shed was repaired. Expenditure, \$999.42.

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During the years 1896 and 1897, repairs were made, the flooring completed and the eastern face of the cribwork completed at an expenditure of \$1,963.75.

During the year 1899, a landing slip was built on the eastern side of the pier at a cost of \$1,000.27.

In 1899-1900, 50 feet of the outer end was sheathed and 200 feet of the flooring was renewed with 3-inch spruce and the shed was painted. Expenditure, \$501.

During the year 1902-3, the work done consisted of general repairs to the shed. Amount of expenditure, \$657.91.

During the year 1903-4, 24 feet in length by 50 feet in width and 34 feet high was sunk in 13 feet depth at low water spring tides. Expenditure, \$2,048.04.

During the year 1904-5, the work done was the completion of the block built the year before, 22 by 50 feet and 35 feet in height, 13 feet of stringers, planking and sheathing was done, and some repairs were made to the wharf. Expenditure, \$1,192.87.

During the year 1905-6, the levelling of the outside pier, which had sunk, was done, a shed with a waiting room was built. Expenditure, \$1,001.38.

During the year 1906-7, the shed commenced in 1905-6, was completed, and the flooring and sheathing repaired. Expenditure, \$1,002.53.

During the year 1908-9, general repairs were done to the wharf. Expenditure, \$400.33.

The work done during the fiscal year 1909-10, were repairs to head block on the east side of the wharf and piles were driven. Work started on September 24, and completed on the 27th of the same month. Expenditure, \$76.94.

ANSE A BEAUFILS.

Anse a Beaufils, in the municipality of Cape Cove, county of Gaspé, is situated on the Gulf of St. Lawrence, 6 miles south of Percé.

In the years 1898 to 1901, protection works on each side of the channel leading to the inner basin were built, consisting of two training piers, each about 440 feet long.

During the last fiscal year, the old work was repaired throughout; raised 2 feet for a length of 200 feet on the west side, and sheathed for a length of 75 feet on the east side.

A crib of 100 feet by 25 feet wide was built, secured into position so as to protect the entrance from southeasterly gales, and built up to 11 feet above low water level.

Expenditure for fiscal year ended March 31, 1910, is \$3,595.76.

ANSE A L'ISLOT.

Anse a l'Islet is a small harbour 7 miles east of Newport, protected from the north and easterly winds by the main coast and from the southwest gales by a small island, being thus open only to southerly gales.

It was decided in 1906 to build a landing pier running from the main shore towards the outside end of the island in a southwesterly direction answering both as a landing pier, and as a breakwater against southerly gales.

During the last fiscal year, a crib of 100 feet was built up to coping and completed giving a total length of 360 feet; the foundations for a shed of 40 by 30 was erected along the inside approach to wharf, and a shed of 30 by 40 built on top and completed this spring. The earth bank on which is located the road leading to the wharf, having been damaged during the fall storms, had to be protected by a strong breastwork of timber with stone ballast for a length of 350 feet.

Expenditure during fiscal year ended March 31, 1910, is \$2,566.73.

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ANSE-AUX-GASCONS.

Anse-aux-Gascons, county of Bonaventure, is situated on the north shore of the Baie-des-Chaleurs, in the township of Port Daniel, 7 miles east of Port Daniel and 42 miles west of Percé.

L'Anse-aux-Gascons is considered one of the best fishing stations on the Baie-des-Chaleurs.

During the session of parliament, 1907-8, the sum of \$2,600 was voted toward the construction of a crib so built as to fill up the angle formed by the new extension with the old portion of the wharf. During the great eastern gales, this angle was the cause of water flying over the wharf and breaking or sinking the boats lying on the other side for shelter. At the end of the fiscal year, a crib 159 feet long and 28 feet at its median line, was sunk and built up to two feet above high water, at a cost of \$2,597.20.

At the session 1908-9, an additional sum of \$2,000, was voted toward that work. During the last fiscal year, the crib, begun the year previous, has been completed; it is a round timber construction of the usual type, well ballasted with stone and protected by hardwood sheathing, 5 inches thick. The crib stands in 11 feet of water. E.L.W.S.T.

The western side of the extension has also been sheathed upon a distance of 100 feet. A guard rail has been placed along the west side of the approach.

The work has been carried out by day's labour at a cost of \$1,994.91; it was begun on July 1 and completed on November 17.

BAIE ST. PAUL.

Baie St. Paul is a village in the county of Charlevoix with a population of 1,500. It is situated on the north shore of the River St. Lawrence, 60 miles below Quebec. The village is located on either side of the Rivière au Gouffre, which is a tributary of the St. Lawrence, and empties into a large bay 3 miles wide; this bay is dry at low water.

During the past fiscal year, the flooring of the wharf was renewed on a length of 500 feet; the longitudinals and cross ties had to be renewed on a height of 4 feet, and most of the floor stringers were renewed; 1,200 feet of new coping was placed; new doors were hung in the waiting room; the roof of the building was reshingled, and the freight shed and waiting room were given three coats of paint.

Work was commenced on September 9, and completed on November 12, 1909.

The expenditure for the fiscal year ended March 31, 1910, is \$2,938.74.

BARACHOIS DE MALBAIE.

Barachois de Malbaie is a large parish and municipality situated at the head of Malbaie bay, some 12 miles east of the county town, Percé.

Barachois, on account of the large area of rich farming lands situated along four rivers that form the Barachois, on account of the important lumber firms that have built their mills along the Barachois, and on account of its first class fishing harbour, now that the government has started a training pier to improve the entrance, may be considered the most promising centre in Gaspé peninsula.

Until the government started the training pier, now under construction, the fishing boats could not safely enter or go out of the harbour at falling tide or at low tide on account of shifting sand bars. They had to remain outside and wait for the rising tide to come in.

The work was commenced in 1904. During the last fiscal year, a crib 80 by 27 feet was built; three different trials were made to get it in position, but the sand that had gathered, whilst construction was going on, prevented the placing of the crib in

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position. It was moored in a safe place for winter and will be placed in position in the spring. A mattress of fascine had to be sunk to protect the southeast bank of the Barachois harbour. The approach to wharf was sheathed for a length of 60 feet, 450 yards of stone ballast were placed on the wharf to secure new crib and 250 yards in old work. In November and December, heavy storms opened a gap through the sheet-piling and carried away part of the cribwork and the stone ballast. This break had to be repaired this spring. Fifty feet were closed with pilework and 100 feet of the roadway had to be protected by close face sheathing.

Expenditure during fiscal year ended March 31, 1910, is \$2,169.57.

BATISCAN RIVER.

The Batiscan river takes its rise in the Laurentide mountains in the county of Quebec, crosses the county of Portneuf and the southeast corner of the county of Champlain, and empties into the northern side of the St. Lawrence at the parish of Batiscan, 21 miles below Three Rivers and 57 miles above Quebec.

Its course is generally through a very mountainous country, and is impeded by a great number of rapids and falls.

The elevation of its lakes at the head is 1,050 feet above the sea.

The area of the valley drained by the said river, measures 1,492 square miles, of which 7 per cent is covered with water.

The river itself is 81 miles in length and receives the waters of 102 lakes.

The river is navigable at its outlet for a distance of about 5 miles to the highway bridge at Ste. Geneviève de Batiscan village.

Boats plying between Ste. Geneviève de Batiscan and Montreal draw from 3 to 5 feet of water.

The impediments to navigation on this section of the river were at Massicotte and St. Arnaud shoals, at sections 15, and 18,000 feet above the outlet, where boats had difficulty in passing at low tide during low water season.

The dredge *Capital* and plant, owned by Messrs. Dufresne and Marchildon, worked in the steamboat channel from June 2 to August 3, 1909, to increase the depth in the channel to 4 feet at low water of 1897.

The dredging was commenced opposite the property of Mr. Nap. Massicotte, 20,920 feet above the outlet, removing all shoals down to 6,770 feet above the outlet, on a width of 35 feet, to a distance of 5,108 feet.

The quantity of material removed amounted to 33,321 cubic yards of clay and sand, and the expenditure under that head was \$6,037.62.

BEAUPORT.

Beauport is a village situated on the north shore of the River St. Lawrence, in the county of Quebec, some 3 miles below the city of Quebec.

During the past fiscal year, urgent repairs were made to the flooring. Work was done between October 25 and 29, 1909.

The expenditure for the fiscal year ended March 31, 1910, is \$54.58.

BIC.

Bic, on the south shore of the St. Lawrence, in the county of Rimouski, about 170 miles below Quebec, is a favourite summer resort.

Its harbour affords the best natural shelter for vessels of moderate draught.

Spring tides rise 17 feet; neaps, 9 feet.

The Department of Public Works owns two wharfs at Bic: An old one which is located in the rear of the cove of old Bic harbour, and another at the extremity of the eastern side of the same cove, or at Point à Cote (see report for 1908-9); this wharf is not yet completed.

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During the last fiscal year, the sum of \$199.85 was expended in making repairs to the old wharf: the stringers, spruce, 35 feet long, 12 by 12 inches; the platforms spanning the spaces between piers were renewed, and the flooring was repaired throughout the wharf.

This work was performed in the month of July, between the 13th and the 25th.

BLACK CAPES.

Black Capes are situated on the north shore of the Baie-des-Chaleurs, in the township of New Richmond, county of Bonaventure.

During the year 1907, in order to provide accommodation to fishermen and give shelter to boats, the sum of \$500.38 was expended in the construction of a protection crib, 50 feet long by 10 feet wide and 9 feet high.

In 1908, an addition to the breakwater, 50 feet in length 17 feet wide and 12 feet high was constructed at a cost of \$349.95.

During the last fiscal year, an additional sum of \$250.03, has been expended to build an approach on the west side of the breakwater; it is a round timber construction, 21 feet long by 10 feet wide, well ballasted with stone; the approach on the east side has also been repaired and covered with 3-inch deals.

The work was done during the month of August and was carried on by day labour.

BONAVENTURE RIVER.

Bonaventure river, in the parish of St. Bonaventure, county of Bonaventure, is one of the largest rivers in the Baie-des-Chaleurs, and the harbour, at its mouth, is the most important lumber shipping harbour of the peninsula.

During the session of 1906-7, in order to improve the mouth of the river, it was decided to build a training pier on the west side of the channel.

On January 29, 1908, a contract was entered into for the construction of a training pier, 1,200 feet long and 22 feet wide. The construction was begun on May 1, 1908, and completed June 1, 1909. Contract price, \$24,500.

It is a round timber construction of the usual type, well ballasted with stone, protected with hardwood fenders; the east side upon its full length and height is sheathed with 6-inch plank.

On June 18, 1909, authority was received to have the west side of the training pier sheathed upon its full length and height, mooring posts, top of sheathing and cap-pieces painted, also to build an approach, 47 feet long, 45 feet wide and 5 feet high. These extra works were performed at the following prices:—

| | |
|----------------------------|------------|
| Sheathing.. . . . | \$1,229 32 |
| Painting (3 coats).. . . . | 313 25 |
| Approach.. . . . | 250 00 |
| Total.. . . . | \$1,792 57 |

BONAVENTURE RIVER (SOUNDINGS).

During the last fiscal year, in contemplation of dredging at the mouth of Bonaventure river, soundings have been taken.

A bench mark, as below described, has been established: Top of bolt, on the cap piece, at the east side of the training pier, about 25 feet from approach, and stands 15.78 feet above E.L.W.S.T.

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CAP A L'AIGLE.

Cap à l'Aigle is situated some 6 miles below Murray bay, in the county of Charlevoix.

During the past fiscal year, minor repairs were made to the movable slip. The expenditure for the fiscal year ended March 31, 1910, is \$2.

CAPLAN.

The municipality of St. Charles de Caplan, county of Bonaventure, is one of the largest municipalities of the Baie-des-Chaleurs; its population, about 2,000, is composed mostly of fishermen and farmers.

It is a station on the Atlantic and Lake Superior railway some 67 miles from Matapedia.

During the last fiscal year, the sum of \$448.39, was expended in improvements to two descents to the beach, previously built.

The above expenditure is divided as follows:—

McLellan's Beach.

An extension 40 feet long, 15 feet wide and 9 feet high has been built to the small breakwater constructed at that place last year. It is a round timber construction of the usual type. The work was resumed on July 3 and completed on the 12th of the same month.

Expenditure, \$298.66.

Poirier's Descent to Beach.

In order to protect the descent against the action of the sea, a small breakwater 30 feet long, 15 feet wide and 8 feet high was built at that place. The work which is of the usual type was commenced on the 9th and completed on the July 16, at a cost of \$149.73.

CAPLAN RIVER.

Caplan River is an important settlement in the municipality of St. Charles de Caplan, county of Bonaventure.

During the fiscal year 1908-9, the protection work on the west side of the river had been undone and rebuilt upon a distance of 50 feet. At the close of the season, an additional crib 50 feet long, 15 feet wide was ready to be sunk; the work was carried on by day labour at a cost of \$870.13.

During the last fiscal year, 1909-10, the crib, begun last year, was completed; it is a round timber construction of the usual type well ballasted with stone. The work was done by day labour, was begun on the 5th and completed on July 17, at a cost of \$199.26.

CAP ST. IGNACE.

The village of Cap St. Ignace, in the county of Montmagny, lies on the south shore of the St. Lawrence, 40 miles below Quebec.

Population in the parish nearly 3,000.

Although Cap St-Ignace is first of all an agricultural locality, the lumber traffic is still prosecuted on a large scale by water and rail by the Price Bros. company and two other firms who operate large sawmills.

The general trade in farm produce, &c., is also very active.

The Department of Public Works having decided to build a wharf to meet the request signed by over 400 citizens of Cap St. Ignace, on December 15, 1908, a contract was entered into for the construction of a work the description of which is as

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follows: A structure of open-faced cribwork 750 feet in length, ~~30~~ 32 feet wide for a length of 702 feet and 30 feet wide for the remaining 48 feet or head block, together with an approach cut into the bank of the river, 22 feet and 30 feet wide at bottom and top respectively, with an incline of 1 vertical to 10 feet horizontal.

The construction began on June 1, 1909, and the final estimate was forwarded for payment on October 18.

An agreement was also entered into for the construction and the fencing of the road leading from the highway to the wharf for the sum of \$158. The work was completed by the end of October.

The total expenditure is \$15,418.50.

CAP CHAT.

An amount of \$2,031.50 was spent towards buying timber for the proposed extension of a training pier at river outlet.

CARLETON.

Carleton, Bonaventure county, is one of the most important places on the north shore of the Baie-des-Chaleurs and also a renowned summer resort.

During the fiscal year 1908-9, the south side of the wharf upon a distance of 100 feet, starting from low water mark, had been pile-sheathed, piles being driven from 10 to 15 feet into the bottom; stringers were renewed; the flooring repaired, and raised up to level.

During the fiscal year ending March 31, 1910, the north side of the wharf, upon a distance of 42 feet, was pile-sheathed, piles being driven into the bottom until refusal. The slip on the north side was also repaired.

The work commenced on August 17, and completed September 13, has been carried on by day labour at a cost of \$566.12.

CARLETON (PROTECTION TO BEACH).

During the fiscal year 1908-9, the sum of \$684.77 was expended toward the reconstruction of the old beach protection situated a few acres west of the wharf at Carleton, Bonaventure county.

At the beginning of the fiscal year ending March 31, 1910, an additional sum of \$613.38 was expended in constructing an extension of 325 feet. It is a round timber construction of 5 feet at its base, 4 feet at the top and 4 feet high, and well ballasted with stone.

This work which was commenced on June 28, and was suspended on August 9, was carried on by day labour.

CHICOUTIMI.

The town of Chicoutimi, in the county of the same name, is situated on the south shore of Saguenay river at the head of navigation, 71 miles above Tadoussac, and is the terminus of the Quebec and Lake St. John railway. The Richelieu and Ontario Navigation Company has a daily service between Quebec and Chicoutimi, during the season of navigation, carrying passengers, freight and mail.

Spring tides rise 17 feet and neaps 10.

Pulp and sawn lumber shipped by water out of Chicoutimi to England and France, amounting to \$398,560.

Coal imported direct, 2,573 tons.

Bricks imported direct, 60,000.

Salt imported direct, 625 tons.

Salt, imported direct, 530 tons.

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Coastwise.—

Reported inwards, 106 vessels.

Reported outwards, 120 vessels.

For details of construction and repairs see previous reports. P.W.R., 1906-7, page 88; P.W.R., 1907-8, page 110.

Wharf Extension.

On January 27, 1908, a contract was signed for the construction of an extension of 500 feet long; on July 11 of the same year, a change was made, instead of 500 feet long, it was decided to build only 400 feet long parallel with the front of the old wharf with a return of 350 towards shore, the original price was for 500 feet, \$52,500, and the sum of \$2,955 was awarded on account of the change.

During the year 1908-9, four piers of 100 feet each were sunk in 15 feet of water, making a total length of 400 feet parallel with the front of the old wharf, and 130 feet of cribwork was built at right angles with the front of the wharf; all these piers were partly filled with stone; the two first had a total height of 38 feet, and the remainder about 22 feet.

The work done during the fiscal year 1909-10, was the continuation of the construction of the extension which now stands as follows:—

400 feet completed, 100 feet ready to receive stringers, and 100 feet of pier sunk to an average height of 21 feet. The filling done is about 30,000 cubic yards.

Amount expended during the year, \$10,040.40.

COTEAU LANDING.

Coteau Landing, the chief town of the county of Soulanges, situated on the St. Lawrence river and on the Grand Trunk railway, $1\frac{1}{2}$ miles from Coteau station, 36 miles from Montreal. It contains one Episcopal church, grist mill, five stores, four hotels, one grain elevator, telegraph and express offices, and is the chief grain shipping port of the country. During summer, it has communication with Montreal by steamer. The Soulanges canal, connecting Lakes St. Francis and St. Louis, starting near the Grand Trunk railway bridge at Coteau, and terminating near the junction of the Ottawa and St. Lawrence, passes in front of the town. This canal takes the place of the Beauharnois canal and adds considerable importance to the town. Population 578.

The Coteau Landing pier, started in 1871 and added to and repaired several times since, is composed of:—

1. A close faced crib headblock 290 feet long for the first 25 feet from outside face, then 24 feet long for another $92\frac{1}{2}$ feet, iceoreaker inclined $1\frac{1}{2}$ in 1, standing 18 feet high in $11\frac{1}{2}$ feet of water of lowest level.

2. A crib and span approach 784 feet 6 inches long, and from 12 to 24 feet wide formed of 25 concrete piers supporting steel I-beam spans and pine flooring.

3. A freight shed 40 feet by 24 feet on headblock.

During July and September, 1909, some 7,000 feet B.M. of flooring was renewed, and the iron pipe guard railing repaired. Expenditure, \$389.28.

The work was done by day labour from July 10 to 27, and from September 9 to 27.

DOUGLASTOWN.

Douglastown, situated in Gaspé Bay, is a village of fishermen and farmers, situated on the rising ground at the south side of the entrance to the St. John river. Its population is between 1,600 and 1,800.

During the fiscal year, a shed of 60 by 16 feet was built on top of the wharf and the repairs, commenced during the last fiscal year, were completed.

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This spring, the damages done by last fall's storms had to be repaired and the top of the wharf raised from 1 to 2 feet.

Expenditure during the fiscal year ended March 31, 1910, is \$1,877.01.

EAST TEMPLETON.

East Templeton village, in the county of Wright, is a landing on the Ottawa river, 6 miles below the city of Ottawa.

During the extraordinary flood of last spring, the dock at this point was completely submerged and the upper dock suffered slight damage.

Repairs were effected at end of November by day labour, at a cost of \$12.

In order to clear the dock of debris, deposited during flood, \$6.50 was spent.

ESCOUMAINS.

Les Escoumains, in the county of Saguenay, is situated on the north shore of the River St. Lawrence, 21 miles below Tadoussac. A very important sawmill, the property of the Saguenay Lumber company, is located at this place.

During the year 1907-8, repairs were done by day labour, to the wharf built in the years 1904-5-6.

For details of construction see report of Public Works, 1906-7, page 99.

On November 23, 1906, a contract for an extension of 200 feet was awarded for the amount of \$12,445.

The work done by the contractor, during the year 1907-8, consisted in sinking two piers of 100 feet each; the extension was nearly to its full height and well loaded with stone.

Total expenditure for the year ending March 31, 1908, was \$11,729.43.

The extension of the wharf was completed on September 3, 1908.

The work done during the fiscal year, 1909-10, consisted in connecting the extension to the old wharf, the shore end of the extension having been damaged by ice in the fall of 1908, and was inclining to the west side; 30 feet of the old wharf and 72 feet of the extension were demolished to low tide, and both ends were connected together, piles were driven for a length of 100 feet to strengthen the foundations, the steam derrick scow of Chicoutimi was used to drive piles.

Work started on June 27, completed October 12.

Expenditure, \$4,040.63.

FABRE.

Fabre village, Pontiac county, on the east shore of Lake Timiskaming, 11 miles south of Ville Marie, has a public wharf which was built in 1906-7.

In April, 1909, from 12th to 27th, the front sheathing and fenders were restored at a cost of \$112.45, from material purchased the year before.

Some 600 pieces of saw-logs were also removed, on June 11, from top of wharf after high water had subsided and superstructure of one small ice-breaker was towed back June 24, the whole costing \$38.38.

Further salvage work, preparatory to winter repairing (October 19-20) cost \$28.74.

Maintenance of light to indicate position of landing place during period of submergence (May 23 to June 13, 1909) cost \$6.55.

From March 1 to 5, 1910, the wharf and outer ice-breaker, damaged by ice-shove, and by traffic during season 1909, were repaired at a cost of \$193.50.

All this work was performed by day labour.

Expenditure for fiscal year ended March 31, 1910, is \$379.63.

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FATHER POINT.

Father Point, in the county of Rimouski, is on the south shore of the St. Lawrence, 6 miles below the town of Rimouski. Most of the ocean liners call there to land or take on their pilots.

The point is one of the few places on the south shore of the St. Lawrence where deep water can be found at a relatively short distance from shore.

A self registering tidal gauge was established here some years ago by the Department of Marine and Fisheries. There are also a powerful compressed air fog-horn, an acetylene gas lighthouse, and a Marconi wireless telegraph station.

During the years 1902-3, a deep water wharf was constructed at Father Point. See report for 1906-7.

During the months of August and September, two movable stairs, one on each side of the wharf, were built.

It was a necessity that such stairs be placed for the accommodation of the numerous passengers landing at the wharf or embarking on steamers. They are working well and are so constructed as to be placed at any level of the tides, or raised up and drawn over the wharf when the waves are heavy.

One man can manage them with the aid of a winch and tackles.

Some repairs were also made to the hardwood sheathing and a diver was employed for a few days to make a survey of the bottom of the wharf.

With a view to the raising and levelling of the top superstructure of the wharf, to be done next summer, 11,360 pounds of iron bolts were bought.

The expenditure for the year amounted to \$993.79.

GATINEAU POINT.

Gatineau Point, county of Wright, is at the intersection of the Gatineau and Ottawa rivers, two miles down stream from Ottawa. In 1885-6, a cribwork wharf was built for local traffic. The structure underwent repairs and was reconstructed in 1904-5.

In April last, under agreement with Francis St. Jean, seven pieces of hardwood sheathing and some iron straps were placed on the fenders at a cost of \$50. On May 15, 1909, the pipe railing was repaired at a cost of \$2.05. The trees which menaced the safety of the structure were cut and removed.

GATINEAU RIVER.

The Gatineau river, in the county of Wright, flows into the Ottawa river at Gatineau Point, two miles down stream from Ottawa city.

The east bank of this stream has been eroded considerably by the action of the current at a point immediately south of the Canadian Pacific railway north shore bridge, which spans the Gatineau river about a mile above Gatineau Point village.

Not only has the bank been washed away, but the stream has also encroached on the highway, so that in order to provide for traffic along this road, a strip of land bordering it was purchased from Dr. Graham, in 1904.

In August, 1909, under agreement with Joseph Legacé, the fence was moved back to the new boundary for a length of 888 feet, at a cost of \$19.50. A bridge used by the public during high water periods was also repaired and improved by Mr. Legacé, at a cost of \$30.

GEORGEVILLE.

Georgeville, a post village in Stanstead county, Quebec, 9 miles from Smith's Mills, 10 miles from Memphremagog lake, which is reached by B. and M. railway steamers, and 10 miles from Magog station on the Canadian Pacific railway. It is

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noted for its beautiful scenery, and contains two churches (Episcopal and Methodist), five stores, one hotel, telegraph and telephone offices. Population, 300.

The Georgeville wharf, built before 1888, consists of:—

1. A crib headblock of irregular shape, 75 feet long outside face, and from 20 feet wide at northern end to 42 feet adjoining approach.
2. A stone approach 156 feet long and from 20 to 23 wide, with sides vertical.
3. Freight shed, 24 by 14 feet, near northern intersection of approach and headblock.

During June, 1909, a sum of \$40.45 was expended in removing the moulds of concrete work done the preceding autumn, and in minor repairs.

Work done by day labour.

GRANDE RIVIERE.

Grande Rivière, county of Gaspé, is the name of an important fishing centre, some 21 miles southwest of Percé.

The sheathing on the outside face has been completed and the flooring raised from 1 to 2 feet on a length of 200 feet.

This spring, materials were bought to repair the wharf in a permanent way.

Expenditure during the fiscal year ended March 31, 1910, is \$5,193.72.

GRANDE VALLEE.

In November last, some temporary repairs had just been started to protect top of wharf when a heavy easterly gale washed away the whole of the top structure for a length of over 200 feet.

A sum of \$257.77 was spent in making temporary repairs.

GRINDSTONE.

Grindstone is a village on the south side of Grindstone island, 4 miles east of Etang du Nord.

The population is composed mostly of Scotch farmers and Acadian fishermen. For years past, most of the freight for the Magdalen islands has been landed here, and the building of a landing pier was greatly needed.

The landing pier, commenced in 1901, was completed in 1906. The length of the pier built of birch and maple close-faced cribwork is 720 feet long with an approach of 700 feet along cape.

During the last fiscal year, a shed of 80 by 22 feet was built on top of a cribwork, built along side of pier. A slip 10 feet wide was built on inside face and the whole of the pier gone over was repaired and painted, and the roadway repaired.

Expenditure for fiscal year ended March 31, 1910, is \$1,284.15.

GRONDINES.

Grondines is a village situated on the north shore of the River St. Lawrence, in the county of Portneuf, 45 miles above Quebec; the population is 1,500.

During the past fiscal year, two of the broken fenders were renewed.

The expenditure for the fiscal year ended March 31, 1910, is \$31.85.

GROSSE ISLE.

Grosse Isle is situated on the River St. Lawrence some 30 miles below Quebec.

The island is used by the government as a quarantine station for steamers coming up the River St. Lawrence.

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During the past fiscal year, most of the sheathing of the old portion of the wharf was renewed, and the waiting-room and freight shed, built last year, was given three coats of paint. Work was commenced on July 21 and completed on August 23, 1909.

Western Wharf.

During the past fiscal year, the floor stringers were renewed, also some cross-ties and longitudinals; the flooring of the wharf was completely renewed, two slips were repaired; the sheathing was renewed on a length of 375 feet, and the approach was levelled and the holes filled in with ballast stone and gravel. Work was commenced on July 21 and completed on August 23, 1909.

The expenditure, on both wharfs, during the past fiscal year ended March 31, 1910, is \$2,421.86.

GROSSES ROCHES.

Grosses Roches is situated on the south shore of the St. Lawrence, in the county of Rimouski, about 15 miles below Matane.

The community is engaged in farming, fishing and lumbering.

During the fiscal year ended March 31, 1910, the sum of \$199.95 was expended in the removal of stones and boulders from the harbour of Grosses Roches.

The work was done in the first fortnight of the month of August.

A good many of the boulders obstructing the entrance to the harbour were removed and the stranding beds for vessels loading there were improved.

HIGH FALLS.

High Falls, Labelle county, is a landing at the head of navigation, on the lower reach of the Lièvre river, and is 24 miles above Buckingham.

The floating landing, built here in 1908, was maintained at a cost of \$67.38 for protection and repeated towing out to deep water.

HUDSON.

Hudson, a post village in Vaudreuil county, on the River Ottawa, and on the Canadian Pacific railway (short line), 9 miles from Vaudreuil and 35 miles from Montreal. It is a landing of the Ottawa steamers, and contains one Methodist church, one Roman Catholic church, telegraph, express and telephone offices, one woollen factory, one hotel and two stores. A favourite summer resort for Montrealers. Population, 500.

The public wharf at Hudson, built in 1901-2, consists of:—

1. A close-faced crib headblock 100 feet long and 20 feet wide.
2. A stone approach 110 feet long, 42 feet wide for the first 42 feet from headblock, and 20 feet wide for the remaining 68 feet with slides ripped and sloped 1 in 1.

3. A storehouse 16 by 20 feet with waiting room at western intersection of headblock and approach.

During August, 1909, part of the flooring of headblock was renewed, and minor repairs made at a cost of \$83.03.

Work was done by day labour.

HULL.

Hull, county of Wright, is an important industrial centre, on the Ottawa river, opposite the city of Ottawa.

During the spring freshet (May 25 to June 12, 1909) the Hull wharf freight shed started to lift on one side. To save it, it was found expedient to immediately

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place 28 loads of stone on the top floor. The stone has since been returned. Cost of labour, \$19.75.

A gauge board 20 feet long was made at a cost of \$9.90.

Expenditure for fiscal year ended March 31, 1910, including maintenance is \$212.15.

ILE AUX COUDRES.

This island has an area of 30 miles and is situated in the river St. Lawrence, some 62 miles below Quebec, opposite Baie St. Paul and Les Eboulements. The distance from the island to the north shore of the river St. Lawrence is $2\frac{1}{2}$ miles; the population is 1,500.

During the past fiscal year, the renewal of the slip on the western side was completed; the spruce sheathing was renewed on a length of 200 feet; the fenders were repaired, and 100 feet, in length, of the flooring was replaced. Some boulders, which were a source of danger to navigation, were removed by blasting. Work was commenced on November 16 and completed on December 13, 1909.

The expenditure for the fiscal year ended March 31, 1910, is \$518.73.

ILE PERROT NORTH.

Ile Perrot North, a post village in Vaudeuil county, 2 miles from Ste. Anne de Bellevue, on the Canadian Pacific railway and Grand Trunk railway, 21 miles west of Montreal.

The public wharf at Ile Perrot North, built 1897-8, is composed of:—

1. A crib headblock 80 by 20 feet, standing 20 feet high in 13 feet of water of low level with 6-inch concrete flooring.
2. A stone and earth approach and right of way from 400 to 470 feet long leading to public road, and from 100 feet near wharf, to 30 feet wide for 355 feet.
3. A storehouse 16 by 20 feet near southeastern corner of headblock.

During November, 1909, some repairs were begun: dry stone wall some 200 feet long, 2 feet high mean and 2 feet wide, built in order to better support the heavy slope of western side of right of way; the fences were renewed with cedar posts and wire, the space south of shed on a length of 40 feet and a width of 16 feet filled in with stone and strongly fenced, to be used as a cattle yard. The storehouse was painted.

Expenditure, \$342.72.

Work was done by day labour.

ILE VERTE.

The village of Ile Verte, in the county of Temiscouata, is situated on the south shore of the St. Lawrence, 16 miles below River du Loup and 130 miles east of Quebec. Spring tides rise 19 feet; neaps, 12 feet.

During the last fiscal year, the renewal of the superstructure of the wharf was continued, but could not be completed owing to a want of funds.

The superstructure on a mean height of 4 feet was renewed on a length of 75 feet.

The stringers and flooring were replaced on the whole width of the wharf for a length of 330 feet.

The flooring was repaired on that part of the wharf where the superstructure has not yet been renewed.

The work was done between July 6 and August 1.

Expenditure, \$999.94.

LAKE MEGANTIC.

Lake Megantic, a town in Megantic county, on the Chaudière river, and a station (Megantic) on the Canadian Pacific railway, 69 miles east of Richmond. It is

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also the south terminus of the Quebec Central railway. It has two churches (Roman Catholic and Presbyterian), 18 stores, four hotels, two lumber mills, two furniture, door and sash factories, two branch banks, besides express and telegraph offices. Population, about 2,000.

The Lake Megantic public wharf, built between 1882 and 1887, consists of:—

1. A crib headblock 80 feet 8 inches long and from 26½ to 31 feet wide, standing 14 feet 3 inches high in 7 feet of water at lowest level.
2. A crib and stone approach 365 feet 2 inches long and 30 feet wide, including 3-foot sidewalk along northern side and cedar guard railing on both sides.
3. A shed 28½ feet long and 12 feet 4 inches wide on headblock under open roof covering 27 by 40 feet.

During August, 1909, the sum of \$29 was expended in painting shed and in minor repairs.

Work was done by day labour.

LAKE ST. JOHN.

Dredging at Roberval, Lake St. John, is done by dredge *Lac St. Jean*, assisted by tug *Marie-Louise*.

For details of dredging plant, see Report Public Works, 1906-7, page 200.

The dredge has been working at Roberval harbour in and out; at Rivière à La Pipe, around the wharf, and at St. Gédéon les Îles for the site of a wharf.

The work done during the fiscal year 1909-10, was the continuation of the dredging in the entrance, and in the Roberval harbour, also at Rivière à La Pipe.

Number of cubic yards dredged, 9,390.

Amount expended, \$5,093.29.

Dredging started on July 12, at Roberval; on July 26 the dredge went to St. Félicien with the tug *Marie-Louise* to help the steamer *Pikouagami*, which was ashore, and back to Roberval on July 30; on September 2 the dredge went to Rivière à La pipe, and was back at Roberval on September 30, where the dredge was placed in winter quarters.

LANORAIE.

Lanoraie, a post village in Berthier county, on the River St. Lawrence, 5 miles from Lanoraie station on the Canadian Pacific railway, 46 miles from Montreal. It is a port of call of the Berthier and Three Rivers line of the Richelieu and Ontario Navigation Company. It contains a Roman Catholic church, several stores and one cheese factory, a temperance hotel, flour and grist mills. Population, 600.

The government wharf at Lanoraie consists of:—

1. A crib headblock 65½ by 29½ feet at bottom and 54 by 27 feet at top, on account of icebreaker, standing 22 feet high in 12½ feet of water at low level.
2. A crib approach 245½ feet long by 23.8 feet wide at top, with icebreaker inclined 1½ in 1.

During June and October, 1909, an outlay of \$25.08 was incurred in making a fence for cattle inclosure, 20 by 8 by 4½ feet, on headblock.

Work was done by day labour.

LAPRAIRIE.

Laprairie, a town in Laprairie county, on the north shore of the St. Lawrence, and a station on the Grand Trunk railway. It contains two churches (Presbyterian and Roman Catholic), eight stores, six hotels, saw and carding mills, one brick yard, one tomato cannery, one agricultural implement factory, two butter factories, post office, savings bank, branch of Banque d'Hochelaga, telegraph, telephone and express offices. It is a beautiful spot near the Lachine rapids, much frequented in summer.

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Communication with Montreal twice a day by railway, and four times a day by steamer. Population, 1,451.

From November 4 to December 5, 1909, some repairs were made to the earth dyke built many years ago and protecting the village on its western side from upstreams end of concrete protection wall, up to the Grand Trunk railway tracks, a distance of 3,338.8 feet. A gap 15 by 23 by 5 feet was filled in and said dyke raised 2½ feet for a length of 700 feet.

Work was done by day labour.

LA SALETTE.

La Salette, a village in Labelle county, is on the east bank of the Lièvre river, 18 miles above Buckingham.

The floating landing, built here in 1908, was maintained intermittently through the year at a cost of \$50.62, chiefly to prevent grounding while the water receded.

Under an agreement with Captain George Bothwell, the traffic has been maintained (April 29 to November 23), past La Salette landslide at a cost of \$1,648.

The right of way over private property for this traffic, including the site of wharf, has cost \$33.33.

From October 14 to October 22, 1909, a new berth for the float landing was blasted out at a cost of \$25.40.

Expenditure for fiscal year ended March 31, 1910, is \$1,867.35.

LES BERGERONNES.

Les Bergeronnes, in Saguenay county, is on the north shore of the St. Lawrence river, 18 miles below Tadoussac. There is a Catholic church, three sawmills, two cheese factories, several stores, a government telegraph office, and a postoffice.

There are at Les Bergeronnes two rivers called Les Petites and Les Grandes Bergeronnes, both rivers are navigable for schooners for a distance of 3 miles at high water, but the channels of the rivers were obstructed by boulders.

From 1887 to 1902, the sum of \$1,254.32 was expended in the removal of obstructions in both rivers.

From the year 1902-3 to the year 1908-9, the work of removing boulders and improving both rivers was continued, and the sum of \$7,705.43 was expended.

The work done during the fiscal year 1909-10, was the continuation of removing obstructions in both rivers which are to-day navigable for most of the 3 miles.

The channel in Les Grandes Bergeronnes river is nearly completed excepting for a few curves.

The channel and the anchorage of Les Petites Bergeronnes is clear.

Work started August 19, and finished September 19

Expenditure for the year, \$811.

LES EBOULEMENTS.

The village of Les Eboulements is situated on the north shore of the River St. Lawrence, in the county of Charlevoix, 70 miles below Quebec.

During the past fiscal year, a new building, to be used as a waiting room and freight shed, was constructed, 60 by 24 feet with a lantern tower on top. Work was commenced on September 18, and completed on October 30, 1909.

The expenditure for the fiscal year ended March 31, 1910, is \$1,646.28.

L'ILE D'ALMA, OR LES CUISSES D'ALMA.

Les CuisSES d'Alma, in the Little Décharge of Lake St. John, is 3 miles from the lake, in the parish of St. Joseph d'Alma, Chicoutimi county, and 7 miles from the village.

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There are three rocks, called Cuissees d'Alma and an island obstructing the Little Décharge.

During last fiscal year, the work done was the continuation of the blasting commenced in 1900-1, to enlarge the channel.

Amount expended, \$498.53.

Work commenced September 22 and suspended on the 27th of the same month, started again December 7, and ended December 24.

LOTBINIERE.

The sum of \$734.26 was expended in improving approaches during the last fiscal year; \$100 went to pay for land purchased in connection with wharf at Vielle Eglise, the balance was applied by accountant of department in making payments for work performed in Portneuf county.

At opening of navigation, \$23.89 was expended for clearing wharf of ice accumulated thereon in early spring, and subsequently to make it ready for navigation, by replacing mooring posts, movable fenders, long and short, iron guard posts, chain and wire guards 500 feet on each side of wharf; at close of navigation the same were removed at a cost of \$18.50.

On resuming work at approaches, it was found that most of the fencing of the land purchased at south end of wharf, in 1908, had been knocked down by floating ice of spring freshets entering in by gully bounding it to the south. Most of the posts and railings had to be put back but solidly fixed in stone and cement, after raising the ground on an average height of 2½ feet on a length of 160 feet by 60 feet wide with the stone, gravel and earth removed from the beach at low water to facilitate approach by water to wharf; material thus removed, either by blasting, pick or shovel, averaged some 325 cubic yards; the work having to be performed between tides was necessarily more or less slow, especially the breaking up of large boulders and permanent reefs near low water line.

On a width of 100 feet on west side of wharf, safe grounding at low water was made for coasting vessels by the removal of nests of large boulders. The entrance on east side, where considerable work had been previously done, was further widened by removal, with dynamite, of reefs and ridges, bare at low water but covered at half or high tide, also several boulders, 3, 4 and 5 feet high. There being a boat ferry service between Lotbinière wharf and Lachevrotière, on the opposite side of the river, for the carrying of mails and passengers to and from Lachevrotière Canadian Pacific railway station, a request was made for two landing stairs, one on each side of the wharf. The need being imperative, one was placed on the west inside slope and the other on east elevation, both secured with screw-bolts, allowing of their removal in the fall.

Work was started July 14 and closed October 4, 1909.

MAGOG.

Magog, a progressive incorporated town in Stanstead county, on the Magog river, at the northern end of Lake Memphremagog. Steamers on the latter, make daily trips during navigation season between Newport, Vermont, and Magog. It is a station on the Canadian Pacific railway, 88 miles east of Montreal and 18 miles southwest of Sherbrooke. It has four churches (Episcopalian, Roman Catholic, Methodist and Union), 25 stores, 4 hotels, 1 large saw and grist mill, 1 sash and door factory, 1 bank (Eastern Townships), 1 printing and newspaper office ('Enterprise,' weekly), besides express, telegraph and telephone offices, mayor's office, schools and good fire department, &c. Population about 3,500.

The government wharf at Magog, situated opposite the Canadian Pacific railway station, consists of:—

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1. A pile headblock 154 feet long and 41.8 feet wide.
2. A pile approach 50 by 24 feet with iron pipe and cedar posts, railing on both sides.
3. A stone approach, making an angle with preceding, 375 feet long and 25 feet wide at top with sides ripped and guard railed.
4. A store-house 20 by 12 feet on headblock.

At intervals, in June, July, August and September, 1909, more than half of flooring of headblock, some 13,000 feet B.M., was renewed in 3-inch spruce, and minor repairs made to fender piles and nigger heads at a cost of \$356.28.

Work was done by day labour.

MARIE.

Marie, a prosperous village on the north shore of the Baie des Chaleurs, county of Bonaventure, is a station on the Atlantic and Lake Superior railway, about 10 miles northeast of Carleton. Population, 2,300.

During the last fiscal year, in view of future ameliorations in the harbour of that important place, soundings have been taken.

A bench mark has been established and described as follows:—

Top of a bolt situated on the cap-piece, east side of the wharf and about 15 feet from the approach. The B.M. stands 13.65 above E.L.W.S.T.

MARIE CAPE.

Marie Cape is at the west part of the parish thus called. During high tides of the spring and fall, the sea washes out the bank and causes frequent land slips which render the public road dangerous. To avoid accidents and to protect properties, during the fiscal year, 1908-9, a round timber construction 330 feet long, 5 feet at the base and 4 feet at the top and 4 feet high, well ballasted with stone, was placed at the foot of the cape.

During the last fiscal year 1909-10, a construction of the same type as the one built last year has been placed a few hundred feet below. Its length is 817 feet and was built by day labour at a cost of \$1,157.98.

The work was begun on July 5, and suspended on August 30.

MASSON.

Masson, Labelle county, also known as Buckingham Junction, 18 miles east of Ottawa, 1 mile from the Ottawa river and 3 miles from Buckingham, is the outlet for a district having a population of 6,000.

The permanent wharf on the Ottawa river, near the mouth of the Lièvre river, was built in 1905-6.

During the spring floods, this wharf was submerged so that it became necessary to have it inspected in order to guard against possible accidents. This was done locally at a cost of \$4.

MATANE.

The village of Matane, in the county of Rimouski, is situated on the south shore of the St. Lawrence, at the mouth of the River Matane and 30 miles east of Little Metis, the nearest station on the Intercolonial railway.

It contains extensive saw-mills, and important shipments of lumber are made to European markets.

A railway is now under construction to connect this place with Ste. Flavie station on the Intercolonial railway.

The Department of Public Works owns two works at Matane: A landing pier on the west side of the river near the Price Bros.' lumber yard, and a breakwater standing on the west side of the mouth of the river and running parallel to it.

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During the year 1908-9, this breakwater was entirely restored (see report for 1908-9).

In the month of August, 1909, between the first and twentieth, repairs were executed to the flooring and sheathing of the landing pier, and ladders were placed where needed.

The expenditure amounted to \$381.18.

MILLE-VACHES.

Mille-Vaches is a village in the county of Saguenay, situated on the north shore of River St. Lawrence, about 42 miles below Tadousac.

For details of wharf construction see Public Works report, page 124, 1908.

The work done during the fiscal year 1909-10 consisted in the removal of boulders in the channel reaching the wharf.

Work started on August 17 and completed September 17.

Expenditure, \$504.91.

MISTOOK.

Mistook, in the township of Delisle, is situated on La Grande Décharge of Lake St. John, in the county of Chicoutimi. It is also called St. Coeur de Marie.

For details of construction and general repairs from 1903-4 to 1906-7, see report Public Works, 1906-7, page 102.

During the year 1908-9, repairs were done to the flooring for a length of 182 feet, four piers were raised 7 feet, and the said piers were sheathed, and fully ballasted.

Amount expended, \$1,994.04.

The work done during the fiscal year 1909-10 was the reconstruction of the freight shed, which was carried away by the floods in the spring of 1908, and the sinking of an intermediate pier 25 feet in length by 25 feet in width, this was done in order to give protection to vessels. The pier as it stands now is built to low water.

Work started April 24, completed August 31.

Expenditure, \$1,031.31.

MONTMAGNY.

The sum of \$99.95 was expended to clear stones from around the new wharf constructed in the rear end of the 'basin' in order to permit schooners to land safely.

This work was done in the month of July, between the 5th and the 30th.

MOOSE BAY.

Moose bay is about midway between the wharfs at Piopolis and Woburn near the southwestern extremity of Lake Megantic. It is a very small settlement now, three or four houses and a saw-mill being the only structures in the immediate locality, but the building of the new Piopolis church, some 300 or 400 feet from site of wharf, will necessarily attract people from the surrounding country.

Built in 1908-9, the Moose Bay public wharf consists of:—

1. A crib headblock 40 feet outside face and 30 feet wide, open-faced under water and close-faced above; standing 13 feet high in 7 feet of water at lowest level, the whole headblock being covered with a shingle roof resting on posts.

2. A crib approach 105 feet long and 20 feet wide, also open-faced under water and close-faced above; guard railing on both sides.

3. A stone approach 65 feet long and 18 feet wide at top with sides riprapped and sloped 1 in 1, also with guard railing.

During July, 1909, the sum of \$51.83 was expended in painting cap piece and guard railing; in adding some gravel and sand on stone approach, and in better securing sheathing of corners of headblock.

Work was done by day labour.

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MURRAY BAY.

Murray Bay is situated in the county of Charlevoix on the north shore of the River St. Lawrence, 83 miles below Quebec; the population is 4,000. Traffic at this point is very important, the wharf being used in winter and summer.

During the past fiscal year, the following improvements were made:—

The beams of the movable slip, which had been broken by ice, were renewed, and minor repairs were made to the flooring. Work was done between June 11 and 22, and the expenditure was \$229.54.

The appliance used in connection with the movable slip was out of order and dangerous; it was replaced by a new model that can be worked by one man instead of eight, is giving entire satisfaction and has proven to be a great improvement on the old system.

The freight shed waiting room and offices were remodelled and enlarged.

All broken planks in the flooring were replaced, and the whole building, trestle tower and coping were painted.

Expenditure on above works was \$1,509.32.

Most of the hardwood sheathing of the face and southwest corner of the wharf and the fenders were renewed; the headblock was recovered with hardwood sheathing and new fenders were placed and iron tie rods were inserted; the rock elm sheathing is 4 inches thick, 8 to 12 inches wide and 25 feet long, while the fenders are of rock elm 12 by 12-inch and 25 feet long.

Ten mooring posts were replaced by new ones, of pitch pine and 20 inches in diameter. Work was commenced on October 30 and completed on December 1, 1909.

Total expenditure for the fiscal year ended March 31, 1910, is \$7,521.40.

NATASHQUAN.

Natashquan, on the north shore of Gulf of St. Lawrence, is situated 75 miles below Exquimaux Point, in Saguenay county.

The work done during the fiscal year 1909-10 was the purchasing of 13,920 feet of timber of 12-inch diameter amounting to \$1,998.80, in view of the construction of a wharf at that place.

A plan with specification was forwarded to Ottawa with the view of calling for tenders.

NEW CARLISLE.

New Carlisle, the shire town of the county of Bonaventure, is situated on the north shore of the Baie-des-Chaleurs, 65 miles from Campbellton, N.B. It contains three churches, two hotels, several stores, telegraph and telephone offices. It is the terminus of the Atlantic and Lake Superior railway, and the starting station of the Quebec and Western railway.

During the fiscal year 1908-9, the sum of \$4,648.56 was expended in the construction of a round timber cribwork, 120 feet long and 20 feet wide, along the easterly side of the wharf. This construction was placed there in order to protect the old portion of the wharf, which was in a very dilapidated condition.

Last summer or the first part of the fiscal year 1909-10, the crib which was built in 1908 up to 2 feet above high water, has been completed. The construction now stands in 8 feet of water E.L.W.S.T., is well ballasted with stone and protected by pile-sheathing, piles being driven 10 to 15 feet into the bottom. Flooring and stringers of the old portion of the wharf were also renewed upon a distance of 200 feet by the full width of the wharf.

The work has been carried on by day labour at a cost of \$2,968.22.

The work begun on July 1 and was completed on September 30.

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NEW RICHMOND.

New Richmond, Bonaventure county, is situated on north shore of the Baie-des-Chaleurs, some 60 miles from Matapedia, and is a station on the Atlantic and Lake Superior railway. It contains two churches, several schools, shingle mills, grist mills and one planing mill. It is one of the largest lumber manufacturing centres in the Baie-des-Chaleurs. Large quantities of dressed lumber and railroad ties are shipped to United States and elsewhere. Population, 2,500.

During the month of October of the last fiscal year, soundings have been taken in contemplation of improvements in the harbour, which are required by the present development of the place.

A bench mark has been established and described as follows:—Top of fender marked B.M. on the west of the wharf some 15 feet south of the freight shed. The B.M. stands 12 feet above E.L.W.S.T.

NICOLET HARBOUR.

Nicolet, a flourishing town in Nicolet county, at the foot of Lake St. Peter, on the Nicolet branch of the Intercolonial railway, and 6 miles from St. Grégoire, on the Grand Trunk railway, 81 miles northeast of Montreal. It contains two churches, three convents, one bank, thirty stores, three hotels, telegraph and express offices, sash and door and carriage factories, one hospital and one harbour of refuge, together with two foundries and one printing office. It has a fine college with a library containing over 20,500 volumes. Population, 2,552.

The Nicolet jetty, built in 1881 and added to and repaired every year since, is situated on the St. Lawrence immediately upstream of the mouth of Nicolet river, $\frac{1}{2}$ mile northwest of Nicolet wharf or $1\frac{1}{2}$ from the town of Nicolet. It was built in order to protect schooners from the force of storms on Lake St. Peter, and also to prevent the mouth of River Nicolet from being filled in with sand, &c., carried down by the St. Lawrence. It is 3,735 feet long and composed of two rows of close piles 13 feet distant with stone filling between.

During June and July, 1909, 200 toises of stone filling were added to jetty, the outer end on a length of 912 feet being raised from 1 to 3 feet. Expenditure, \$2,998.

Work was done by day labour.

NORWAY BAY.

Norway Bay, Pontiac county, is located on the Quebec shore of Chats lake, an expansion of the Ottawa river. As this place is a summer resort of some importance, there is considerable ferry traffic across to Sand Point, Ontario.

Owing to the appropriation of 1908-9 for a dock not having been re-voted, authority was given to expend \$100 for a temporary landing.

Accordingly, timber was procured in April, at a cost of \$27.75, and a landing was built in July, 1909, after high water period, at a cost of \$100.85.

NOTRE DAME DU LAUS.

Notre Dame du Laus, in Labelle county, is 6 miles from the head of navigation (at the foot of Rapids des Pins), on the second reach of the Lièvre river, 46 miles above Buckingham.

The small float landing, built here in 1908, grounded on an uneven keel, when the spring flood subsided. Navigation on the High Falls, Notre Dame du Laus stretch, was then doubtful owing to the burning of the only steamboat. However, it was found necessary to place the float on better ground, which cost \$32.

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PERCÉ.

The head of the North Cove pier at Percé having been smashed in by the steamer *Canada*, some temporary repairs were started in November, but could not be completed on account of a very heavy storm which carried away part of the timber, most of the top stone ballast, and caused the pier to settle for a length of some 300 feet from 1 to 3 feet. An amount of \$296.74 was expended.

PICHÉ POINT.

Piché Point, Pontiac county, on the Quebec shore of Lake Timiskaming opposite Haileybury, is the landing for Guigues township, a prosperous farming district which sends supplies to the mining region on the Ontario side.

Through unusual circumstances affecting the movement of the ice on Lake Temiskaming, last spring, the Piché Point pilework dock was seriously damaged.

A local inspection was made in May, 1909, at a cost of \$3.

A light was maintained to mark the submerged landing head (May 24-June 12) at a cost of \$5.

The sum of \$26.88 was spent (June 16-23) for salvage of timber from damaged portion of dock.

Part of landing head and approach was rebuilt (July 7-August 7) at a cost of \$987.97.

Further work of repairs was performed (October 27-29) at a cost of \$25.25.

Again this last spring (March 7-25, 1910), the south half of landing head and portion of approach was reconstructed as well as repairing northwest corner of ice-breaker, at a cost of \$399.78.

The repairs were carried out by day labour.

PIOPOLIS.

Piopolis, a post village in Compton county, on the west shore of Lake Mégantic, 11 miles from Lake Mégantic station, on the Canadian Pacific railway. There is good fishing in the rivers within a radius of 15 miles; also deer and partridge hunting. It contains one Roman Catholic church, grist and saw-mills, and general store. Population, 460.

The Piopolis public wharf, built in 1882-3, consists of:—

1. A crib headblock 56 feet 9 inches by 20 feet 3 inches, with open covering 20 by 20 feet.

2. A crib approach 153 feet 9 inches by 12 feet wide.

3. A storehouse 9 by 16 feet on headblock.

During August, 1909, the sum of \$103.19 was expended in repairs; three rows of timber at southeastern corner, which had been displaced by ice, were more firmly secured; the whole front face and east side of headblock were sheathed with 6-inch spruce, and some gravel and sand added in headblock.

Work was done by day labour.

POINTE À BROUSSEAU.

Pointe à Brousseau is the west point of the municipality of Chlorydormes, 190 miles below Metis on the St. Lawrence river. The point partly protects a very good fishing harbour except at the time of spring tides, and the work under way is to complete the protection of said harbour by building from Pointe à Brousseau Cape breakwater over the shoals to the deep water entrance. One hundred and seventy-five feet were built during the month of October last.

Some timber was bought for the prosecution of work in 1910.

Expenditure during the fiscal year ended March 31, 1910, is \$3,017.50.

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POINTE À ELIE.

Pointe à Elie is the extreme southeasterly point of Allright island, 2 miles east of the House Harbour Catholic church.

The steamer *Lady Sybil* calls at Pointe à Elie for mails and freight and for shelter during northeasterly gales.

The construction of a landing pier and breakwater will give the best of shelter from all storms, especially from easterly gales that prevail in the spring.

During the last fiscal year, the crib commenced last year was completed, secured into position and built up to within 4 feet of coping.

Spring tides rise 4 feet, neap 2 feet.

Expenditure during fiscal year ended March 31, 1910, is \$7,688.13.

POINTE AUX TREMBLES.

Pointe aux Trembles en Haut, a post village in Laval county, on the Island of Montreal, 10 miles from Montreal; it can be reached by electric tram cars. It contains one Roman Catholic church, one French Protestant college for boys and girls, under the auspices of the Presbyterian Church of Canada, three stores, three hotels, besides telephone office. There is an excellent rifle range half a mile from the village. Population, 876.

In the spring of 1909, the municipality of Pointe aux Trembles transferred to the Crown the municipal wharf composed of:—

1. A crib headblock 46½ feet long and 15 feet wide.

2. A 24-foot approach 95 feet long.

Reconstruction was begun at the end of October. The old structure was razed to extreme low water level, an additional crib 15 by 23 feet sunk at southwestern intersection of headblock and approach making the former 30 feet wide between up-stream end and approach.

On February 22 last, when work was suspended, all had been completed but corner plates and nigger heads for headblock, flooring of approach and minor improvements. Expenditure, \$2,263.81.

Work was done by day labour.

POINTE AUX TREMBLES (EN BAS).

Pointe aux Trembles is situated in the county of Portneuf, on the north shore of the River St. Lawrence, some 20 miles above Quebec.

During the past fiscal year, minor repairs were made to the movable slip of the wharf.

The expenditure for the fiscal year ended March 31, 1910, is \$13.45.

POINT FORTUNE.

Point Fortune, a post village in Vaudreuil county, on the River Ottawa, and on the Montreal and Ottawa short line of the Canadian Pacific railway, 7 miles from Grenville, 45 miles northwest of Montreal. It contains three churches (Roman Catholic, Presbyterian and Methodist), two stores, and one hotel, besides express and telegraph offices. Population, 400.

The Point Fortune public wharf, built in 1902-4, consists of:—

1. A close-faced crib 224 feet long, parallel to shore, and 25 feet wide with stone and earth back filling, sunk in 7 feet of water at low level and standing part 12 feet and part 16 feet above zero gauge.

2. A storehouse and waiting room 48½ by 20½ feet.

3. A cattle yard 56 by 43½ feet.

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During July and August, 1909, the sum of \$590.70 was expended in strengthening the inside downstream corner of crib; building a second slip opposite storehouse; completing filling in of cattle yard and back of crib; erecting some 175 feet of wire fence with cedar posts every 10 feet, and in building 125 feet of 3-foot wide 3-inch pine plank sidewalk.

Work was done by day labour.

POINTE PLATON.

The division line between the parishes of Lotbinière and Ste. Croix, in the county of Lotbinière, intersects Pointe Platon at the St. Lawrence, 770 yards or thereabouts northwest of the Joly de Lotbinière wharf, running out from the extremity of the Pointe.

This is the wharf offered for sale to the Crown by Mr. Edmond Joly de Lotbinière, and which was examined by orders of the honourable the Minister of Public Works of Canada as to its value, condition and public utility, and the probable cost of placing it in a good state of repair. The price asked by Mr. Joly de Lotbinière being \$15,000 with clear right of way through his property to wharf.

The whole premises were examined on August 24, 1909, at very low water, when the wharf, at its highest point of headblock stood 18 feet above low water; its outer end elevation was originally placed in 11 feet at low tide; since then gradual filling up has reduced this depth to about 6 feet.

There has also been a great accumulation of sand and gravel on the beach, between the original line of low water, since the wharf was built, placing the present inshore end on or below the level of its surrounding made up land, especially on east southeast side, reducing its original length of face timbers to 425 feet on west northwest and on east side to 220 to first angle in headblock, the latter having a frontage of 135 feet on river.

The wharf was built some 63 years ago by Mr. Joly's grandfather, the headblock having only 83 feet frontage, the other 52 feet at lower end being added later on.

The whole structure was originally built of large sticks of pine 14, 15 and 16 inches square, with roadbed of broken stone, coarse gravel, earth and sand from end to end including headblock; the face timbers, within an average height of 5 feet from top, are in a fair state of preservation, needing only proper sheathing from low water up, to guard against ice; the upper tiers are more or less in a bad condition and will have to be removed, some tiers to the full length, others only partially; renewals thereof in latter years being of hemlock timber. The east end addition seems to have suffered more from ice, being strained and settled slant some 12 to 15 inches at the down stream end.

It would cost about \$5,000 to place the wharf in good repair, and the sum of \$15,000 asked by Mr. Joly for his wharf and right of way through his property, provided he also gives in addition the extent of beach and deep water lot, would be a fair and reasonable price for the whole. For reasons most obvious, the Crown should have sea and beach room of its own around the wharf and not be limited to or by its face timbers all around, to pay dearly later for room to extend, or for service ground.

With some dredging, the original depth of 11 feet at end of pier and of 15 at 100 feet farther out, could be obtained, making this wharf useful in every way, especially in view of the projected winter navigation and keeping of an open channel between Quebec and Montreal, a deep wharf at foot of the Richelieu rapids would be serviceable to government vessels employed in this work.

As a landing place for local traffic and travel, the need and importance of the Platon wharf is no way less than the wharfs at Lotbinière, Ste. Emilie and Deschailions, and of far more than the combined three wharfs of Grondines, Deschambault and Cap Santé put together, on north side of river.

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POLTIMORE.

Poltimore, Labelle county, is a small settlement, some 2 miles inland from the Lièvre river, on the west bank, opposite La Salette.

The float landing placed here in 1908, was maintained intermittently through the year, at a cost of \$47.63, for protection and towing, including a change of site.

A half-inch chain, 46 feet long, was purchased and placed, for better securing the float against ice shoves, at a cost of \$9.17.

PORT DANIEL.

Port Daniel, Bonaventure county, is situated on the north shore of the Baie des Chaleurs, 45 miles from Percè. It is an important settlement of 1,200 inhabitants, mostly engaged in the fishing industry.

Spring tides rise 7 feet.

During the fiscal year 1909-10, the outer end of the wharf which had settled down $4\frac{1}{2}$ feet has been raised up and levelled to its normal height upon a distance of 106.8 feet.

The work was carried out under all possible difficulties, the freight shed and the lighthouse had to be raised 7 feet to permit the labourers to work underneath. A new floor has also been placed in the freight shed. The work was carried on by day labour at a cost of \$2,497.49.

The work was commenced on June 21 and suspended on November 18.

The sum of \$89.68 was also expended to repair a descent to the beach situated near by. Those repairs were done in October.

QUEBEC HARBOUR.

The work consists in building a deep water wharf on the continuation, in a northerly direction, of the breakwater built many years ago on the river front of the harbour.

The wharf is 1,460 feet long on the outer face, 990 feet long on the inner face, 300 feet wide between the parallel faces, with a depth of 42 feet at low water spring tides; the outer face is now completed and is used for landing passengers, principally immigrants, and freight; the two 'Empress' steamers of the Canadian Pacific railway line occupy one of the berths almost continuously.

The work was commenced in 1903 and was carried on under five different contracts; details as to the mode of construction may be found in previous annual reports.

The fifth contract includes the construction of the inner face of the wharf, 990 feet long; a bulkhead 400 feet long, parallel with the Louise embankment, and 136 feet of the outer end of the wharf, a total length of 1,526 feet. It was commenced in 1908; at the end of that year, the excavation for the foundation of the cribs had been done over a length of 570 feet, 70 feet wide; two cribs forming a total length of 320 feet had been sunk in place and ballasted, and 200 feet of the concrete superstructure had been completed.

During the fiscal year 1909-10, the crib foundation was dredged on a length of 800 feet, four cribs, forming a total length of 667 feet, were sunk and ballasted and the concrete superstructure was built on a length of 512 feet; 74,300 cubic yards of earth filling were placed at the back of the timber and concrete wall; a temporary freight shed, 500 feet by 80 feet, not included in the contract, was also built at the northern end of the complete outer face of the wharf. Work was suspended for the winter on November 12.

The total amount charged against this work in the accountant's books for the fiscal year 1909-10 is \$279,974.95; from this must be deducted \$40,705.05 paid by the

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contractors for the use of the government dredge *International* in performing the work.

The actual expenditure for the fiscal year was \$239,229.90.

REPENTIGNY.

Repentigny, a post village in l'Assomption county, on the St. Lawrence, with port on that river at the quay de Repentigny. Its station, $1\frac{1}{2}$ miles distant, is St. Paul l'Ermite, on the Canadian Northern Quebec railway. It has one Roman Catholic church, one store, one hotel and two mills. Population, 594.

The public wharf at Repentigny, built in 1905-8, is situated $\frac{1}{2}$ mile upstream of parish church. It consists of:—

1. A closed-faced crib headblock, 73 feet 6 inches long by 40 feet wide, ice-breaker inclined $1\frac{1}{2}$ in 1, standing 19 feet high in 7 feet 3 inches of water at lowest level.

2. A close-faced crib approach 230 feet long and 16 feet wide.

3. A stone approach 748 feet long and 18 feet wide at top with sides'riprapped 1 in 1.

The ice shove of the spring of 1909 caused some damage to the crib approach, from two to three of the upper tiers being displaced. Repairs were begun in the month of November following; suspended December 7; resumed March 19, 1910, and completed March 30. The whole upstream side of approach was sheathed with $\frac{1}{2}$ -inch steel plates covering coping and four tiers of timber. The icebreaker of headblock was likewise sheathed with $\frac{1}{2}$ -inch steel plates 10 feet long; and the riprap and top of stone approach improved. Expenditure, \$904.29.

Work was done by day labour.

RIGAUD.

Rigaud, a post village and seigniory in Vaudreuil county, on the Rivière à la Graise, 2 miles south of the quai de Rigaud, a port or call on the Ottawa river. It is a station on the Canadian Pacific railway (Montreal to Ottawa short line), 16 miles northeast of Vaudreuil, and 41 miles west of Montreal. It is 8 miles east of St. Eugène, Ontario, on the same line, and 75 miles east of Ottawa. It is the seat of Bourget College and Ste. Anne's convent. The sanctuary of Notre Dame de Lourdes in Rigaud mountain, is, in the summer season, a place of frequent pilgrimage. The village has one Roman Catholic church, six stores, one foundry, one branch bank, saw, grist, carding and fulling mills, besides express and telegraph offices. Population, about 800.

The Crown has already a wharf at Rigaud in River à la Graise, some 300 feet above the Canadian Pacific railway bridge.

During the spring of 1909, the railway company asked for approval of plans for alterations to their bridge. As the boat *Victoria* doing the local service to Montreal and intermediate points could not, at high water, pass under the bridge to reach the public wharf, it was made a condition of approval of said plans that the Canadian Pacific railway would contribute \$1,500 towards the construction of a high level wharf some 600 feet downstream of said bridge.

On November 10, order in council was passed granting authority to purchase from Mr. Geo. Séguin, for the sum of \$700, the land required for wharf: a rectangle 100 by 89 feet.

Construction was begun in the middle of October:—

1. A pile headblock 73 feet outside face, 26 feet wide, standing 18 feet high in 10 feet of water at low level.

2. A stone and earth approach 34 feet long, from 20 to 16 feet wide and sloped 8 in 1 leading up to King's highway.

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Work was suspended December 31 until appropriation of 1910-11 would be available. All is completed but the construction of a freight shed 30 by 18 feet, and some improvements to approach. Expenditure, \$1,495.58.

Work was done by day labour.

RIMOUSKI.

The town of Rimouski, in the county of the same name, is situated on the south shore of the St. Lawrence, 180 miles below Quebec; its population is nearly 4,000.

It is an important station of the Intercolonial railway, it is also the place where the Royal mails are transferred from steamers to the railway and vice versa.

Spring tides rise 15 feet; neaps, 9 feet.

The Rimouski wharf which is 2,240 feet in length, was formerly 20 feet wide only; during those three last years, it was widened to 42 feet throughout its full length.

During the last fiscal year, to permit of dredging to a depth of 15 feet at low water spring tides, to be done along the western face of the wharf without endangering the stability of the structure, pitch pine piles, 10 inches in thickness, were placed on a length of 447 feet; they were sunk a depth of 15 feet into the bottom and thoroughly secured to the face timbers.

The rain guard used for the landing of the Royal mails, was extended a length of 24 feet.

As there is much wear on the pavement of the wharf owing to heavy lumber traffic, a double flooring of spruce deals, 3 inches thick, was laid on top of the old one, on a surface of 28,816 square feet.

Minor repairs have also been made and the expenditure was \$7,352 including the salary of the general foreman for the year.

The work was commenced on July 1, and completed by November 1.

Dredging.

During the fiscal year ended March 31, 1910, the departmental dredge *Ottawa* was engaged from the beginning of August to the month of October, in lengthening and deepening the 15 foot channel required at Rimouski, to permit the mail tender *Lady Evelyn* to perform her service without any delay or interruption.

The quantity of material removed amounted to about 26,500 cubic yards consisting of clay, sand and small boulders.

The length of channel dredged during the season, was 650 feet by a width of 120 feet and the mean depth of clay excavated was 6 feet.

During the summer of 1908, the dredge *Progress* did the shore part of the channel and although the dredging is far from being completed at Rimouski, nevertheless the state of things is much improved and, last summer, not the least delay was experienced by the mail tender on account of low water.

RIVIÈRE À LA PIPE WHARF.

Rivière à La Pipe, is a small village situated on the north shore of Lake St. John, at the mouth of the river of the same name, 7 miles north of La Grande Décharge.

The wharf is situated on lot No. 118, township of Taillon, about 1 mile westward of Rivière à La Pipe. It is built in a southerly direction, about 75 feet from the shore, for a length of 600 feet and a width of 25 feet, and extends to 8 feet in depth at the mean summer level of Lake St. John.

For details of construction and general repairs up to 1907-8, see Public Works report, 1908, page 124.

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The work done during the year 1908-9, was the demolishing of 150 feet long by 3 feet in height of the old wharf which had been damaged by spring flood, and the rebuilding of 244 feet by 25 feet, and 3 feet in height, a sheathing was put on for a length of 80 feet and the wharf is fully ballasted.

The work done during the fiscal year 1909-10, was the completion of the sheathing stringers, and the flooring on the new wharf, and on a certain portion of the old work the flooring was renewed.

Work started June 15, discontinued October 30, and started again on March 18, 1910, and completed on the 30th.

Amount expended, \$1,996.89.

RIVIÈRE BLANCHE.

The village of Rivière Blanche or St. Ulric de Matane, county of Rimouski, is on the south shore of the St. Lawrence, 21 miles east of Metis and 9 west of Matane.

Spring tides rise 14 feet; neaps, 8 feet.

An addition to the wharf, 100 feet in length, 26.9 feet width on top with a batter of 1 in 12, and a mean height of 23 feet, was built under contract at Rivière Blanche during the fiscal year ended March 31, 1909.

The work was commenced on June 3 and the final estimate was forwarded for payment on November 19, the contract price being \$6,300.

An extra, amounting to \$430, was granted to the contractor to renew the superstructure of the head of the old wharf, on a length of 100 feet and a height of 2 feet.

The total amount expended on that work was \$6,963.75.

RIVIERE DU LIEVRE (BUOYING).

The Lièvre river runs south through Labelle county and empties into the Ottawa river at Masson, 18 miles below Ottawa city.

The dredged channel, below the Poupore locks, was buoyed, June 14-22, at a cost of \$35.45.

Target ranges were also established at the Long Rapids channel above La Salette, August 16-26, at a cost of \$17.43.

RIVIÈRE DU LOUP.

Rivière du Loup, or the town of Fraserville, is the cheflieu of county of Temiscouata. It is situated on the south shore of the St. Lawrence, 114 miles below Quebec. It is a thriving little town of over 5,000 inhabitants, and contains several manufactories, including two pulp mills.

The Rivière du Loup point, where the wharf is located, is distant $2\frac{1}{2}$ miles from the village. It is one of the best known and most frequented summer resorts of the St. Lawrence.

There is a branch of the Intercolonial railway extending from the station to the outer end of the wharf, a distance of about 6 miles.

Spring tides rise 19 feet; neaps, 12 feet.

During the last fiscal year, the renewal of the superstructure of the wharf, commenced two years ago, was continued.

The top structure was entirely renewed on a surface of 15,190 square feet on a mean height of 4 feet; the timber used was cedar and spruce.

Six thousand four hundred and eighty feet B.M. of rock elm and oak were employed to renew part of the sheathing of the outer face, and 500 feet B.M. of red birch, 5 inches in thickness, used to repair the sheathing of the west face.

The buildings standing upon the head of the wharf were repaired and painted.

Three ladders were placed where needed.

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The work was commenced on June 18 and closed on October 16; it was executed by day labour.

The expenditure amounted to \$5,929.96.

RIVIÈRE DU LOUP (EN BAS) DREDGING.

During the season 1909-10, a contract was let to the W. J. Poupore Co., Limited, of Montreal, to perform some dredging near the outer end of the wharf.

The clam shell *Prince Willie* was engaged on that work from August 7 to September 2.

Sixteen thousand two hundred and ninety-eight cubic yards of material were removed from the inside of the L of the wharf, providing a depth of 7 or 8 feet at low water spring tides.

The material removed was silt and soft clay.

The amount expended on dredging at Rivière du Loup was \$7,429.80.

RIVIÈRE DU LOUP (EN HAUT).

This river flows through the county of Maskinongé and empties into the St. Lawrence, on the northern shore of Lake St. Peter, at Louiseville, about 21 miles above Three Rivers.

The river is navigable at its outlet for a distance of about 3½ miles to the highway bridge at Louiseville for boats drawing less than 4 feet of water, during the low water season.

During the navigable season of 1909, dredging has been done as per articles of agreement entered into with the W. J. Poupore Company, Ltd., which had two dredges at work on the river; the channel was dredged to 5 feet at low water.

Dredging operations were performed at Louiseville landing pier and the approach to the three wharfs at Tourville's mills, by dredge *Duke of York*, and the removal of small shoals between the government wharf and the mill for a 4 foot channel, from June 1 to July 29, 1909, by the removal of 24,311 cubic yards of clay, sand and wood.

Dredge *Pontiac* worked under the same contract from July 5 to 16, 1909, at section 9,000 feet above the outlet, for a five foot (5') channel, where 6,633 cubic yards of clay, sand and wood were removed.

30,944 cubic yards of clay, sand and wood were removed by the two dredges, on a distance of 19,000 lineal feet, during the summer of 1909.

The total expenditure during the fiscal year ending March 31, 1910, amounted to \$6,983.46.

RIVIÈRE DU SUD.

The Rivière du Sud which flows through the town of Montmagny, empties into the St. Lawrence by a perpendicular fall of 20 feet. Below the fall the river expands and forms what is called the 'basin.'

Near the town of Montmagny, the river is crossed by the Intercolonial Railway bridge, and along the eastern bank above the bridge, a retaining wall was constructed in 1895 and extended in 1901; the object of constructing the wall was to protect the bank of the river and to prevent the public road from being disintegrated by the current and ice, which in freshet times, are deflected in that direction by the ice-breaker piers of the Intercolonial railway bridge.

During the last fiscal year, the wall was extended a distance of 150 feet.

The average height of the wall is 8 feet; the width is 7 feet at the bottom and 5 feet at the top.

It is built of large rubbles hammered and scabbled on the faces and laid so as to form proper bonds with suitable headers and stretchers.

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The copings are laid in cement and all exterior joints are also cemented.
The backing is formed of broken stones and earth.
The work was commenced on June 30, and closed on August 23.
The expenditure amounted to \$1,466.45.

RIVIÈRE OUELLE.

The pier is situated at Pointe-aux-Orignaux, 5 miles distant from the village of Rivière Ouelle, in the county of Kamouraska, on the south shore of the St. Lawrence, opposite Murray Bay.

A branch of the Intercolonial railway, built from Rivière Ouelle station to the outer end of the wharf, bears trains connecting with a steamer which crosses the St. Lawrence several times a day during the summer season, calling at Murray Bay and other places on the north shore. In winter the service is also daily.

Spring tides rise 20 feet; neaps, 12 feet.

In 1908, on the request of navigators, it was decided to close the long slip, on the east side of the wharf, 200 feet in length, 11 feet in width and 23 feet greatest height.

The slip was about half filled, but owing to lack of funds, the work had to be postponed.

During the last fiscal year, the work was completed, thus giving a clear floor space the whole length of the wharf.

The closing of the slip was done with heavy cribwork filled with stone ballast.

The rail guard on both sides of the wharf, was repaired and renewed on nearly one-quarter of the whole length.

Repairs were also made to the stairways of the head of the wharf.

The work was commenced on June 14, and completed on September 10.

The expenditure was \$3,670.17.

RUISSEAU À SEM.

A small cove on the south shore of the St. Lawrence, in the county of Rimouski, about 25 miles below Matane.

The Jas. Richardson Co. ships lumber to European markets, and several vessels are loaded through lighters at Ruisseau à Sem.

The cove where lighters used to land was very dangerous on account of the number of boulders obstructing the entrance.

In 1908, some work was extended to improve the harbour, and during the last fiscal year, the sum of \$400 was expended for further improvements.

This work was done between July 1 and 31.

ST. ALPHONSE DE BAGOTVILLE.

St. Alphonse de Bagotville is situated at the head of Ha! Ha! bay, on the southern side of the River Saguenay, 66 miles from its mouth.

A landing pier was built by the parochial authorities prior to confederation, at a cost of about \$3,200.

For further details of construction and general repairs see Public Works report, 1905, page 162.

From 1905-6 to 1908-9, minor repairs were made to the wharf.

On November 27, 1907, a contract was entered into for the construction of an extension at the head of the old wharf, but the work was not started before September, 1908, on account of the difficulty of procuring timber, finally the dimension of timber was changed and work was started as stated above.

During the fiscal year 1909-10, the work done was the completion of the extension, which is of the following dimensions: 58 feet wide on the western side, and 45

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feet on the eastern side for a length of 160 feet measured on top from outside to outside of the face timber.

Work was completed on November 17, 1909.

Amount expended during the year, \$29,395.26.

The original amount of the contract was \$38,350, the sum of \$874.50 was deducted on account of the reduced dimensions of the timber used, the specification called for timber of 14 inches in diameter, and timber of 12 and 13 inches was allowed.

STE. ANGÈLE DE LAVAL OR DOUCET LANDING.

Ste. Angèle de Laval, a post village and parish in Nicolet county, on the St. Lawrence river, opposite Three Rivers and near Doucet's Landing, on the Three Rivers' branch of the Grand Trunk railway to Victoriaville and Arthabaska. It has a Roman Catholic church and convent, five stores, two temperance hotels, two restaurants, several mills and manufactories, with express and telegraph offices. Population of parish, 982.

The public wharf at Ste. Angèle de Laval, built by contract in 1907-8, immediately downstream of the old Grand Trunk railway wharf, consists of:—

1. A pile headblock 85½ feet long and 64 feet 5 inches wide standing 24 feet 10 inches high; 11½ feet of water at lowest level.

2. A pile approach 72½ feet long and 20 feet wide for the first 60 feet 6 inches from stone approach, widening to 37 feet at intersection with headblock.

3. A stone approach 26½ feet long and 20 feet wide at top with slopes of 1 in 1 on both sides.

4. A right of way 30 feet wide and 460 feet long, leading from public road.

During November, 1908, in order to better protect the wharf against ice, an extra of \$1,200 to main contract, was arranged with contractor for the sheathing (in 4-inch plank from the flooring down to 2 feet into ground) of pile approach and inner sides of headblocks; the understanding being that said extra would be paid out of the 1909-10 appropriation.

STE. ANNE DES MONTS.

The Ste. Anne river flows into the St. Lawrence at the west end of the village of Ste. Anne des Monts, one of the oldest and most important establishments on the Gaspé peninsula, some 100 miles below nearest railway station, Little Metis. Several sawmills are in operation.

The training pier, starting from the southwest or left bank and built out for a length of 950 feet until it reached the northeast end of a small rock uncovered at low tide, was completed and ballasted but not floored over. A narrow channel was opened on the east side of the jetty, the old channel having been closed by the training pier. The work built since 1906 consists of: one landing pier, 250 feet long inside, with 100 feet of bank protection work above landing; of 950 feet of training pier, and a new channel of some 100 feet along training pier.

Expenditure during the fiscal year ended March 31, 1910 is \$2,364.14

STE. ANNE DU SAGUENAY.

The parish of Ste. Anne du Saguenay is situated on the north shore of the Saguenay river 72 miles above Tadousac and opposite the town of Chicoutimi.

Spring tides rise 17 feet and neaps 9 feet.

For details of construction and repairs up to 1907-8 see Public Works report 1908, page 140, also Public Works report, 1906-7, page 120.

The work done during the year 1908-9, was the construction of a pier 36 feet by 26 feet, and 30 feet deep, which is a continuation of the present wharf. the west side of the old wharf has been raised 4 feet. a sheathing was put on.

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Expenditure, \$3,999.75.

The work done during the fiscal year 1909-10, was the sinking of an intermediate pier to keep the sand from filling the east side of the wharf, the flooring was also repaired and a 4-inch sheathing was put on around the head block.

Work started July 12, discontinued October 27

Expenditure, \$2,499.97.

ST. ANTOINE.

An examination was made in course of the fall of 1909 at St. Antoine de Tilly, county of Lotbinière, for the possible location and construction of a deep water wharf, at a site off the parish church in preference to a tidal wharf previously (in 1908) asked for, to be constructed at another site, called 'Les Fonds' de St. Antoine, some 1½ miles west of the church, and where there is an old landing the property of Captain F. Boisvert, of Ste. Croix, actually in use. It was represented that while it was useless to ask for or expect to ever get a deep water wharf at Les Fonds, owing to local conditions, it would be quite feasible at the church, owing to the proximity of deep water from shore.

Distance between lines of low and high water, spring tides, is not more than 1,065 feet, with from 10 to 14½ feet water within the next 200 feet out.

There are at least, south of St. Antoine, four parishes which would be directly benefited by a deep water wharf at St. Antoine, to ship by water their farm produce, &c., to the Quebec and Montreal markets where they cannot reach by railway, under existing conditions which cannot be improved.

ST. CHARLES BORROMÉE.

St. Charles Borromée is a village situated on the north shore of La Grande Décharge of Lake St. John, in the county of Chicoutimi, 21 miles above Chicoutimi.

The work done during the fiscal year 1909-10 was the continuation of the two landing piers commenced in 1905-6, which were completed and fully ballasted, and small freight sheds were erected on both sides of La Décharge.

Work started August 10, discontinued on October 8.

Expenditure, \$600.

ST. CHARLES DE CAPLAN.

St. Charles de Caplan, situated on the north shore of the Baie des Chaleurs, is one of the most important business centres of the county of Bonaventure.

During the month of September of the fiscal year 1909-10, the sum of \$150 has been expended to sheath the approach to the wharf built in 1908, with 3-inch deals upon a distance of 130 feet by 13 feet in height.

ST. DENIS.

St. Denis, a flourishing post village and parish of St. Hyacinthe county, on the River Richelieu, 18 miles from St. Hilaire station, 6 miles from Contrecoeur, on the south shore of Montreal and Sorel railway. It contains one Roman Catholic church, one convent, one hospital, 10 primary schools, one commercial college, one bank, one savings bank, seven stores, two hotels, saw, flour and planing mills, five butter and cheese factories, three carriage factories, three furniture factories, cutlery, sash and door factories, one tombstone manufactory, and one bank (Provinciale), telegraph and telephone offices. Population of parish (composed of 200 families), 2,150.

During the summer of 1909, the Crown bought from Mr. Euchariste Lamothe, for the sum of \$500, the old crib and stone wharf and adjoining plot of land immediately west of Yamaska street, the whole forming an area of 7,666 square feet.

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In September, the construction was begun of a pile headblock in front of the old structure, 60 feet long, outside face, including 12-foot ice-breaker, 32 feet wide, standing 18 feet 3 inches high in 8 feet of water at lowest level. Approach with stone with sides riprapped 1 in 1, is 128 feet long and 29 feet wide at top. Work completed at the end of December with an outlay of \$2,999.68 including price of old wharf and land.

Work was done by day labour.

ST. ELOI.

St. Eloi is a post village of the county of Temiscouata, on the south shore of the St. Lawrence, 21 miles east of Rivière du Loup.

The small landing pier commenced last year on the south side of Rivière à la Loupe, for the accommodation of people engaged in the sea-grass industry, was completed during the fiscal year ended March 31, 1910.

The wharf is 105 feet in length, 24 feet in width, its height, at the outer end, being 6 feet.

The section built in 1909 is 75 feet long.

The work was begun on June 17 and completed by August 1.

The expenditure for the year amounted to \$999.79.

STE. EMÉLIE.

The government accommodation for landing and embarking freight and passengers at Ste. Emélie, Lotbinière county, consists of an isolated block built out from the shore, and connecting with same, during season of navigation, by a trestle-roadway of 12 feet deals on a length of 636 feet.

The block measures, on top, 55 feet long on river by 25.6 feet wide; the up stream end having a slope of 1 in 1, also slope of 1 in 1½ on south elevation; front and east elevations having 1 foot in 10.

The trestle roadway, abuts on the beach, below high spring tides, with a cart road of 500 feet to attain an outlet lane to the public highway.

The trestle roadway cannot be placed until the spring tides of May and June are over and, in abnormal high water, not before July; removal being effected as soon as navigation is closed in November; twice within the last three years of 1907-8-9, one-third and one-half of the roadway timbers have been swept away by heavy sea and storm, in November, before they could be removed.

Besides the expenditure attending the placing and removing of the roadway, there are annual renewals and repairs of broken and damaged timbers, planking, posts and fenders, upright and permanent.

The expenditure under this heading amounted to \$312.14 during the last fiscal year; of this amount, \$19.83 paid for removal of ice, replacing movable fenders and the two small sheds on block at opening of navigation; cost of placing trestle roadway in June, \$162.72, including ordinary repairs and renewals on same; in July another sum of \$86.84 was expended on renewing some deck timbers of block; and the balance of \$42.75 being for removal of timbers in November last.

Work was performed on different occasions between April 2 and November 24, 1909.

STE. FAMILLE (ISLAND OF ORLEANS).

St. Famille is situated on the north shore of the Island of Orleans in the county of Montmorency, 18 miles below Quebec.

During the past fiscal year, the flooring of the wharf was renewed on a length of 200 feet. Work was commenced on November 3 and completed November 11, 1909.

The expenditure for the fiscal year ended March 31, 1910, is \$262.57.

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ST. FRANCOIS DU LAC.

St. Francois du Lac, chef-lieu of Yamaska county, on the southern side of the River St. Francois, opposite the village of Pierreville, about 7 miles above the entrance of the river into the St. Lawrence, 28 miles northeast of Sorel.

A patch of land and a right of way from the public road to the river was purchased, and a landing pier was commenced on August 31, 1908, and was discontinued on December 3, 1908, for the winter. The work was resumed on March 24, 1909.

The landing pier was completed September 4, 1909; the embankment in rear of the pile work to be completed.

The structure consists:—

1. Of an icebreaker built of close-faced cribwork, measuring 30 by 25 feet, in width, 8 feet in height under low water mark and 16.62 feet in height above low water.

2. Of a pile wharf 142 feet long and 21 feet wide, 48 feet of it is 12.9 feet in height above low water, and the remaining 94 feet is 8.84 feet in elevation, to be used during the low water season.

3. Of an earth and stone approach with drainage, about 800 feet long and 30 feet wide.

The expenditure for the fiscal year ended March 31, 1910, amounted to \$4,114.19.

ST. FRANCIS RIVER.

This river takes its rise in Lake St. Francis, in the county of Beauce. It flows southwest through Beauce county and Wolfe county, crosses the northwest corner of the county of Compton and takes a sharp turn to the northwest at Lennoxville; it flows through the counties of Sherbrooke, Richmond, Drummond and Yamaska, and empties into Lake St. Peter on its southern shore, near the Yamaska outlet. It is 150 miles long; there are many falls and rapids in its course.

The river is navigable at its outlet for a distance of about 10 miles to the first rapid, for boats drawing less than 4 feet of water, during the low water season.

Dredging was resumed on June 1, 1909, at St. Francois du Lac landing, by dredge *Pontiac*, the property of The W. J. Poupore Co., Limited. Three cuts were made averaging 26 feet in width and 770 feet in length; 26,135 cubic yards of clay and sand were removed during the month of June (1st to 30th), 1909, at the eighth mile above the outlet.

Dredging was also done by dredge *Prince Willie*, the property of the W. J. Poupore Co., Limited, at Notre-Dame de Pierreville, at section 26,000 lineal feet above the outlet at Landry crossing, where 1,112 cubic yards of clay and sand were removed.

From October 4 to November 17, 1909, dredge *No. 5*, belonging to the department, worked at Notre-Dame de Pierreville at Landry crossing, at 26,000 feet from the outlet, to remove the shoal obstructing navigation at low water, where 12,523 cubic yards were removed; two cuts wide for a distance of 793 lineal feet was done.

The total expenditure during the fiscal year ended March 31, 1910, amounted to \$4,996.46.

ST. FULGENCE.

St. Fulgence, otherwise called L'Anse aux Foins, is a small village in Chicoutimi county on the north shore of the Saguenay river 10 miles below Chicoutimi.

For details of construction and repairs up to 1907-8, see Public Works report, 1906-7, page 122, and Public Works report, 1907-8, page 143.

The work done during the fiscal year 1908-9, was the completion of the pier commenced in the previous year; this pier is 35 feet in length, 30 feet in width, on a height of 13 feet and fully ballasted.

Expenditure, \$1,511.97.

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Work done during the fiscal year 1909-10, was the sinking of an intermediate pier, 25 feet in length by 25 feet in width, to break the current at falling tide, so as to permit sail-boats to land and stay at the side of the wharf.

Work started July 12, discontinued September 30.

Expenditure, \$1,017.58.

ST. HILAIRE.

St. Hilaire, a post village in Rouville county, 1 mile from St. Hilaire station on the Grand Trunk railway, 22 miles east of Montreal. It has eight stores, three hotels, one branch bank, two butter and cheese factories, two carding, one flour and two flax mills and a Roman Catholic church. It is a well known summer resort near St. Hilaire lake. Population, about 250; of parish, 1,300.

The St. Hilaire wharf is immediately opposite the parish church. Begun in February, 1909, it was completed in the middle of August last at a further cost, for fiscal year, of \$1,091.29.

The structure, a stone wharf, is a close-faced crib, 60 feet long outside face, with 22-foot return wings at each end, stone filling between, with macadamized top standing 18½ feet high in 8 feet of water at lowest level. The shed erected thereon is 16 feet by 24 feet.

Work was done by day labour.

ST. IGNACE DE LOYOLA (NORTH).

St. Ignace de Loyola, a post village and parish in Berthier county, on the St. Lawrence river, close to the western end of Lake St. Peter, and 2½ miles from Berthierville station on the Canadian Pacific railway and Sorel, on the opposite bank of the St. Lawrence, in Richelieu county. It contains a Roman Catholic church and one store. Population, parish, 875.

The St. Ignace de Loyola (north) wharf, built in 1905, is immediately opposite the parish church. It consists of a pile block 49 feet long, 33 feet wide, standing 16 feet high in 8 feet of water at low level.

During August, September and November, a sum of \$999.37 was expended in repairs; a ballast floor was securely bolted to the piles at low water level, and the block filled in with stone. Some binders were renewed as was also about ¾ of the 3-inch pine flooring.

Work was done by day labour.

ST. JEAN (ISLAND OF ORLEANS).

St. Jean is situated on the south shore of the island of Orleans, in the county of Montmorency, 18 miles below Quebec.

During the past fiscal year, minor repairs were made to the flooring of the wharf and the movable slip.

The expenditure for the fiscal year ended March 31, 1910, is \$77.84.

ST. JEAN DESCHAILLONS.

Of the appropriation of \$3,500 voted at session of 1909 for completing building of roadway approach and two sheds at St. Jean Deschailons, and perform dredging of channel of approach to new government wharf, it was decided to make secure and protect the work already erected on side wharf, against any damage ensuing later on by landslide or otherwise, at an expenditure of about \$800, and use the balance of \$2,700 for dredging.

The expenditure on roadway approach was limited to \$732.56, consisting mainly in reducing the heavy grades on hill, rising from the beach; sloping sides of cuttings

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and giving better drainage to roadbed; reinforcing upper part of trestle roadway platform; filling lower part of crib at east end of side wharf with three toises of stone ballast and earth scooped down from roadbed; 320 feet of guard-railing, with heavy posts, were securely placed along the most dangerous parts of road to wharf; and these and other portions of last year's woodwork were painted to preserve tops of posts, joints, &c., from damp and water.

Work commenced August 1, and was suspended October 30, 1909.

Dredging.

During and after construction of present government wharf at St. Jean Deschaillons, it was found that its channel of approach was very much obstructed by unaccountable shallow patches with only 4, 6, 9, 10 and 12 feet of water at low tide, alongside of deep water of from 15 to 20 feet and more.

On investigating the cause it was found that when the dredging of the ship channel at Cap à la Roche was transferred by the Montreal Harbour Commissioners to the Department of Public Works of Canada, in or about 1889-90, the officials of the latter made a dumping ground of the locality, which was the local harbour at the time, destroying it altogether, leaving scarcely 7 feet of water where formerly 30 feet existed not 350 feet from high water line.

Last season, a government dredge was to work around the wharf in July or August; however, the government dredge *Progress* reached Deschaillons only on Saturday, October 2, starting work on Monday the 4th, and was hurried away on the following November 6. In this interval, five working days were lost through some breakage in the machinery and boiler of dredge.

Of the remaining 28 days, five were Sundays and holiday (November 1), leaving 23 working days during which dredge worked 152 hours or equal to 19 days of 8 hours; the balance of time was taken up by coaling of dredge, moving of same, waiting for scow to go and return from dumping ground, only one scow of a capacity of 100 yards being used during the whole time.

The material removed: broken stone, already crushed by previous dredging, gravel and earth washed in among the stone with a certain amount of sand, amounted to 234 scow loads, or, say 23,400 cubic yards, while some 4,948 yards were cast over. Some six cuts of irregular lengths and depths, owing to the formation of the several heaps, were made, the whole, however, averaging 1,954 feet in length, 8 feet deep and 50 feet wide.

ST. JOSEPH DE LETELLIER.

St. Joseph de Letellier, in the Bay of Seven Islands, north shore of River St. Lawrence, is situated in the county of Saguenay, 200 miles below Tadousac.

In 1908-9, a crib of the following dimensions was constructed: 40 feet by 30 feet, with an average height of 14 feet, and about 20 toise of stone were placed in the crib; it was impossible to sink it on account of the season getting too late.

Expenditure, \$3,310.38.

The work done during the fiscal year 1909-10, was reconstruction of the crib commenced the year previous, the pier having been damaged by ice during the winter, but was sunk in 15 feet of water at low tide; the pier is 25 feet in height and practically finished.

Work started July 24 and discontinued September 21.

Expenditure, \$2,000.44.

ST. LAURENT.

(Island of Orleans).

St. Laurent is situated on the south side of the Island of Orleans, in the county of Montmorency, 10 miles below Quebec.

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During the past fiscal year, minor repairs were made to the flooring of the wharf, movable slip and mooring posts.

The expenditure for the fiscal year ended March 31, 1910, is \$124.50.

ST. LIGOURI.

St. Ligouri, a post village in Montcalm county, on the river called Lake Ouareau, 1 mile from Montcalm station, on the Canadian North Quebec railway. It contains one church, one convent, three stores, one hotel, two butter factories, two grist mills and one carding mill. Population, 200; of parish, 1,170.

On November 4, 1909, a contract was entered into for the construction of a concrete icebreaker at St. Ligouri.

The structure to be of reinforced concrete, 30 feet $8\frac{1}{2}$ inches extreme length, and 8 foot 1 inch extreme width at bottom, 22 feet long and 7 feet wide at top, 13 feet high with upstream face nosed 90 degrees and inclined 1 in 2 from bottom up to 4 feet from top, thence square and vertical, all other faces being battened 1 in 24.

Work was begun in the middle of November last, and completed December 4, following.

ST. MARC.

St. Marc de Cournoyer, a post village in Verchères county, on the Richelieu river, 9 miles from Beloeil station on the Grand Trunk railway, 15 miles from St. Hyacinthe. It contains one Roman Catholic church, three stores, one sawmill, two door and chair factories, &c., besides one butter and two butter and cheese factories and a telephone office. Population of parish, 950.

The public wharf, built in 1901-2, and situated about 2 miles above the village, consists of:—

1. A pile headblock $88\frac{1}{2}$ feet long, 17 feet wide for the first upstream 63 feet, and $32\frac{1}{2}$ feet wide for the remaining 25 feet; outer face standing 10 feet high in 6 feet of water at lowest level. Flooring made of 6-inch concrete with Clinton wiring; upstream side protected by a crib ice-breaker standing $2\frac{1}{2}$ feet higher than flooring of headblock.

2. A stone approach 100 by 20 to 45 feet with sides riprapped and sloped 1 in 1.

3. A storehouse 15 by 22 feet.

During November, 1909, minor repairs were made to the approach, $5\frac{1}{2}$ toise of stone being added.

Expenditure, \$36.

ST. MATHIAS.

St. Mathias, a post settlement in Rouville county, 3 miles from Richelieu, a station on the Central Vermont railway. It contains a Roman Catholic church, one store and one sawmill. Population, 300; of parish, 800.

The public wharf at St. Mathias, built in 1902-3, consists of:—

1. A close-faced crib headblock 90 feet 2 inches long, and 20 feet wide for a length of $68\frac{3}{4}$ feet from upstream end, and 30 feet for the remaining $22\frac{1}{4}$ feet; ice-breaker sloped $1\frac{1}{2}$ in 1.

2. A stone embankment 155 feet long and 40 feet wide with sides riprapped 1 in 1.

3. Two storehouses, one movable 12 by 19 feet on wharf, and the other permanent $20\frac{1}{2}$ by $26\frac{3}{4}$ feet, built some 230 feet inshore above highest water mark.

During September, 1909, the stone approach, slightly damaged by the spring high water, was repaired with gravel and sand at a cost of \$31.60.

Work was done by day labour.

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ST. MICHEL DE BELLECHASSE.

During the last fiscal year, from July to the end of October, the departmental dredge *Progress* worked at St. Michel to widen and deepen the channel leading from the wharf to deep water.

In order to ensure a uniform depth of water in the channel, four continuous cuts 50 feet wide were made; starting at a distance of about 300 feet from the outer end of the wharf, the cuts had a length of 900 feet.

The minimum depth of water is 9 feet at extreme low water spring tides.

The material excavated was sand and hard clay. Numerous large boulders were encountered, some having cubical contents of 5 and 6 yards. The lifting of these boulders was a cause of much delay to the work.

The shore part of the channel is still at 7 feet depth and it would be desirable that a uniform depth of 9 feet be obtained throughout the channel.

ST. MICHEL D'YAMASKA.

St. Michel d'Yamaska is a post village in Yamaska county on the Quebec, Montreal and Southern railway, 10 miles from Sorel, about 3 miles above the lock on the Yamaska river. This river, one of the tributaries of the St. Lawrence, divides the village.

Population, 1,575.

A patch of land from the public road to the river was purchased, being parts of lots Nos. 36, 41 and 42 of the cadastral plan of the parish.

The landing pier consists of close-faced cribwork, measuring 108 feet long, 30 feet wide and 12 feet in height, in 4 feet of water, with an ice-breaker at the upper end, measuring 34 by 30 by 4 feet.

The work commenced September 29, was discontinued December 3, 1908, for the winter. The work was resumed on March 26, and the landing pier was completed with the approach on September 11, 1909.

The expenditure for the fiscal year ended March 31, 1910, is \$4,163.

ST. NICHOLAS.

The sum of \$2,850 appropriated for repairs to the government wharf and buildings at St. Nicholas, Lévis county, was expended during the last fiscal year in renewing the entire deck timbers from end to end, also floor stringers where needed; wheel guards of 11 by 11-inch timber were placed two tiers deep on top of upper tier of face timbers, forming 22 inches in height above same, and 19 inches above flooring abutting on the guards.

The northwest corner of outer end block, which had settled on a length of 60 feet to 12 inches, with only about 5 inches at opposite or northeast corner, was levelled up with new timber when all old, decayed or broken material was removed; 25,650 feet B.M. of 3-inch pine deals were used on main roadway, and 4-inch spruce deals were placed on such parts of outer end block where ice piles over in spring; 28,300 feet B.M. of square spruce, 8, 9, 10, 11 and 12 inches square were used in repairs and renewals. The lifting slip, 41 feet long by 8 feet wide, was all renewed, the stringers being of 10 by 14-inch pine, full length of slip. A retaining wall of cribwork, 136 feet in length, running east and west, along the shore on edge of road leading to wharf, had a planking of 6 to 7 feet wide, encroaching on width of road and in very bad condition, necessitating its removal and the filling up of an empty space of 3 feet deep underneath with stone and earth, over which were placed new stringers and longitudinals for a new 3 feet wide sidewalk of pine deals.

Previous to this last work, trenches had been opened from foot of hill across the roadway and three wooden drain canals placed therein to draw off the water spring-

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ing out of cliff and spreading over the roadbed; the water is drained to beach by outlets in retaining wall; the road having been raised, rounded off and levelled with broken stone, earth and gravel, is in perfect order. A steep ascent or hillock on road to wharf was cut down from 4 feet in middle, decreasing gradually to nothing both ways at 56 feet from centre, forming a cut of 2 feet average by 112 feet in length and 18 feet wide; the material removed was used to level up ground in vicinity of wharf. Altogether, about 104 cubic yards of stone was quarried and placed in works.

To prevent the large stable, government property, from collapsing through decayed timber foundations, resting mostly on detached masonry supports, it was found necessary to renew several lengths of under-timbers, floor stringers, cross timbers and some floorings.

Certain unavoidable repairs were also done to combine storage and waiting-room the latter formerly used as a dwelling house.

The stable is an extensive building of 24 by 100 feet, with double row of stalls for accommodation of horses and cattle, in connection with market boats calling at wharf at all hours.

The building yet needs heavy repairs.

Two mooring posts were removed; tops of all posts protected with sheet iron and painted, and whole of wheel guards were painted.

Forty gallons coal tar also used wherever necessary to protect timber from decay. Work was started on June 1 and suspended September 21, 1909.

ST. PAUL ILE AUX NOIX.

St. Paul de l'Île aux Noix, a post village and parish in St. Johns county, on the Richelieu river, 2½ miles from Stottsville, on the Grand Trunk railway, with port at Île aux Noix. The locality is frequented by sportsmen for the fishing and hunting. The village has one Roman Catholic church, two stores, one hotel, one butter and cheese factory, with Bell telephone service. Population of parish, 600.

The government wharf at St. Paul de l'Île aux Noix, built in 1897-8, consists of:—

1. A crib headblock 61 feet long and 32 feet wide, outer face standing 17 feet high in 9½ feet of water at low level.
2. A trestle approach 156 feet long and 20 feet wide, guard railing on both sides.
3. A stone and earth embankment 98½ feet long, 20 feet wide, with sides and outer end sloped 1 in 1.
4. A store-house 16 by 20 feet at downstream end of headblock, and a permanent derrick.

During July and August, 1909, the roadway leading from the King's highway to wharf, was repaired at a cost of \$111.40.

Work was done by day labour.

ST. SIMÉON.

St. Siméon is situated on the north shore of the River St. Lawrence, in the county of Charlevoix, 107 miles below Quebec.

During the past fiscal year, the headblock of the wharf was made fast to the rest of the work by inserting four iron tie-rods, 1½ inches in diameter.

The head block, which is not protected by hardwood sheathing and which had sustained, during the last winter season, damages caused by the ice, was given temporary protection by placing around its face and sides, rock elm fenders, 10 inches square and 25 feet long, placed in pairs at a distance of 4 feet between each pair.

A new brick chimney was erected on the waiting room. Minor repairs were made to the flooring, movable slip, freight shed and waiting room; the approach to

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the wharf was also improved. Work was commenced on September 8, and completed October 16, 1909.

The expenditure for the fiscal year ended March 31, 1910, is \$2,080.85.

ST. SULPICE.

St. Sulpice, a post village in l'Assomption county, on the north shore of the St. Lawrence, 24 miles below Montreal, 5 miles from l'Assomption, on the line of the Canadian Northern Quebec railway. It contains one Roman Catholic church, two stores, and one hotel. Population of parish, 650.

The St. Sulpice wharf, bought from the Richelien and Ontario Navigation Co., in 1907, and rebuilt and enlarged since, is situated at the foot of road leading to l'Assomption, and some $1\frac{1}{2}$ miles southwest of the parish church. It consists of:—

1. A crib headblock $87\frac{1}{2}$ feet long at bottom, $78\frac{1}{2}$ feet at top on account of ice-breaker, 30 feet wide, upstream of approach, and 40 feet wide, downstream of it; outside face standing 20 feet high in 8 feet of water at lowest level.

2. A crib approach 139 feet long and $21\frac{1}{2}$ feet wide with ice-breaker all along.

3. A plot of land adjoining wharf and extending to public road, of irregular shape, forming an area of 4,575 square feet.

Out of the 1909-10 appropriation, a sum of \$852.50 was paid for stone ballast furnished last autumn. The balance of the \$1,181.75 expended was for improvements to approach. These were done in March, April, and September, 1909, by day labour.

ST. ZOTIQUE.

St. Zotique, a post village and parish in Soulanges county, on the St. Lawrence, and a station on the Grand Trunk railway, 2 miles from Coteau Junction. The village contains two stores, two hotels, and one telegraph office. Population, 400; of parish, 1,000.

The wharf at St. Zotique, built in 1881-4, and added to and repaired several times since, to-day consists of:—

1. A crib headblock 132 feet long, including ice-breaker, and 24 feet wide, sunk in 10 feet of water at lowest level.

2. A 12-foot wide and 1,082-foot long crib and span approach formed of 25 piers, close-faced crib substructure and concrete superstructure, and steel spans.

During October, 1909, the iron pipe guard railing, bought the previous spring, was put in place and minor repairs done.

Expenditure, \$245.61.

SABREVOIS.

Sabrevois, a post village in Iberville county, on the Richelieu river, and a station on the Quebec, Montreal and Southern and Rutland railways, 7 miles from Iberville and St. Johns. It has two churches (Roman Catholic and Episcopal), two stores, one hotel, boys' college and ladies' school, one lumber and saw-mill, two butter and two cheese factories, besides express, telegraph and telephone offices. Population, about 400.

The Sabrevois public wharf, built in 1900, consists of:—

1. A pile headblock 105 feet 7 inches long and $24\frac{1}{2}$ feet wide, with a cribwork ice-breaker at upstream end.

2. A trestle approach 130 feet long and 20 feet wide.

3. A stone embankment 546 feet long and 20 feet wide, with slopes of 1 in 1 on outsides.

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During June, November and December, 1909, repairs were done to the 1,048-foot roadway leading from King's highway to wharf; stone, gravel and sand replacing that washed away by the spring waters. Outlay, \$149.75.

Work was done by day labour.

SAGUENAY RIVER.

Saguenay dredging is done at the Chicoutimi harbour and in the channel, so as to complete the channel from the harbour to foot of Les Battures, about 9 miles from Chicoutimi.

Work done during the fiscal year 1909-10 was the continuation of the dredging of the harbour and in the channel.

Work started on June 28, 1909, and was resumed on November 15. The dredging in the harbour was in front of the old wharf and in front of the extension to an average depth of 18 feet.

Material removed in the harbour was: clay, 15,594 cubic yards.

The dredging in the channel was done to an average depth of 18 feet; material removed was clay, and 99,385 cubic yards were removed. The dredging was done in line of No. 2, or Rivière Valin range light, for a total length of 2,800 feet by 90 feet in width.

Amount expended in the harbour, \$1,677.88.

Amount expended in the channel, \$30,000

Total of cubic yards, 114,979.

SANDY BAY.

The village of Sandy Bay is situated on the south shore of the St. Lawrence, in the county of Rimouski, 13 miles west of Matane.

During the last fiscal year, the sum of \$392.30 was expended in removing boulders and cleaning the beach at different places to permit fishing boats to draw near the shore at high tides.

Several small coves were cleared in this way, anording places for small boats to land safely.

This work was performed in the months of July and August.

SAULT AU MOUTON.

Sault au Mouton is situated on the north shore of the St. Lawrence, 3 miles from Mille-Vaches village.

Sault au Mouton river is navigable at high water but is very dangerous on account of boulders.

An extensive sawmill was built, in the winter 1906-7, the property of the Iberville Lumber company.

From the year 1906-7 to the year 1908-9, the work done was the removing of boulders in the channel.

During the fiscal year 1909-10, the work done was the continuation of the removal of boulders.

Work started August 17, discontinued September 17

Expenditure, \$495.29.

SAULT MONTMORENCY.

Sault Montmorency is situated on the north shore of the River St. Lawrence, in the county of Quebec, 8 miles below the city of Quebec.

During the past fiscal year, a fence which had been erected on the revetment wall by the Quebec Railway, Light and Power Company, was removed.

The expenditure for the fiscal year ended March 31, 1910, is \$24.02.

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SOREL.

Sorel, an incorporated city, capital of Richelieu county, on the right bank of the River Richelieu, at the mouth of Lake St. Peter, on the Quebec, Montreal and Southern railway, 52 miles northeast of Montreal, 33 miles from St. Hilaire.

Sorel contains water and gas works, a court of justice, a prison, a fine market, manufactories of engines, boilers, mill machinery, saws, stoves, ploughs, agricultural implements, grates for steam boilers, doors, sashes, leather, bricks, three printing offices, English and French newspapers, two branch banks, 18 hotels, Roman Catholic and Anglican churches, two fine Roman Catholic colleges, a Protestant model school, a convent, a hospital, an orphanage, telegraph, telephone and express offices, and about 50 stores. Population (census, 1901), 7,037; population, 1907, estimated, 8,500.

Work on the contract entered into August 7, 1907, between the Crown and Mr. J. E. Beauchemin, of Sorel, for the construction of cribs in front of the trestle wharf built in 1901-5, was continued this year. Contract price being \$125,000, calling for:—

1. The construction of 6 close-faced cribs from 18 to 40 feet wide at bottom, from 15 to 18 feet wide at top, 41 feet high and a total length of 687 feet with necessary filling.

2. Dredging to 30 feet below extreme low water level of a foundation for the above, including a 5-foot deep stone seat from 40 to 62 feet wide.

3. Placing 1,116 cubic yards of stone to form revetment at northeast end of old structure in the St. Lawrence.

On August 25, 1908, an extra of \$37,839.20 was awarded contractor for some changes in original plan. The crib instead of resting on the 5-foot stone foundation is to rest on 4 rows of piles driven from 25 to 35 feet into the ground, the first row immediately under the face timbers, the second and third rows 5 feet apart, and the last row from 8 to 10 feet from the third piles, 1,374 in all, of each row being 2 feet apart centre to centre.

At the end of March, 1910, all the cribs had been sunk in place and built to the top. Half of them were completely filled in with stone, the other half up to low water level.

Last estimate, made November 20, certified, \$140,909.45.

TADOUSSAC HARBOUR.

Tadoussac is the chef-lieu of Saguenay county, on the eastern side of the entrance of the Saguenay river; it is located in a bay between Pointe Rouge and Pointe de l'Islet, with a sandy beach; the bay is about half a mile wide and third of a mile deep, the anchorage is in from 7 to 18 fathoms of water with a clay bottom.

The harbour is considered safe in every direction, either by land or reef, and is much frequented by vessels looking for shelter.

The Richelieu and Ontario Navigation Company has a beautiful hotel facing the bay, which is very much patronized.

During the fiscal year 1908-9, a sum of \$5,000 was voted for the construction of a wharf.

A certain quantity of timber was purchased from the amount voted.

Expenditure, \$376.20.

During the fiscal year 1909-10, the sum of \$2,000 was taken out of the general appropriation 'Harbours, Quebec,' to purchase timber for the proposed wharf.

Expenditure, \$1,718.87.

Wharf.

Tadoussac, or l'Anse à l'Eau, the chef-lieu of the county of Saguenay, is a watering place on the northeastern side of the Saguenay river, about 5 miles above its mouth; it is much frequented by tourists and health seekers during the summer

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season. The village contains three churches, one of which is the oldest church built in Canada, having been erected in 1747, four hotels and many stores, a telegraph office and many handsome villas, a fish hatchery has also been erected here by the Department of Marine and Fisheries.

For details of construction and general repairs to wharf see report Public Works Department of Marine and Fisheries.

From 1904 to fiscal year 1907-8, minor repairs were made to the wharf.

During the fiscal year 1908-9, the work done was the flooring of 250 feet of the roadway, 600 feet of sidewalk repaired, the flooring of the wharf was also repaired; a sheathing was put around the wharf for a length of 80 feet, the roof of the freight shed was also repaired, and a railway put on the promenade leading to the salmon reservoir.

Expenditure, \$500.76.

During the fiscal year 1909-10, minor repairs were made to the wharf, and the wiring of the slip was replaced.

Expenditure, \$126.88.

Work was done in April and August, 10½ days in all.

VAL DES BOIS.

Val des Bois is a village in Labelle county, above High Falls and at the foot of navigation on the second reach (18 miles long) of the Lièvre river.

The float landing, built here in 1908, was inspected for the sake of protection during the spring floods, at a cost of \$7.

VILLE MARIE.

Ville Marie, Pontiac county, is an agricultural centre of importance, located on Baie des Pères, Lake Timiskaming, and is a point of call for passenger and freight boats plying on these waters. As there is no railroad connection as yet, landing facilities are indispensable.

The public wharf suffered minor damages through the spring flood. The approach deck was loaded with stone to prevent it floating away and was unloaded after water subsided. This work was performed by Timiskaming Navigation Company and townspeople who willingly lent their services in the emergency, without cost to the government.

About 80 feet at the shore end of the approach being distorted and the roadway washed by the flood, repairs were made (June 28-30) at a cost of \$15.43.

After, this spring (March 21-29, 1910) further repairs were carried out when the inner approach, damaged by 1909 high water, was repaired, and the landing face was improved by addition of fenders, at a cost of \$107.59; work was done by day labour.

WOODMAN'S BEACH.

Woodman's Beach, a meeting place for fishermen, situated on the north shore of the Baie des Chaleurs, Bonaventure county, some 4 miles east of New Richmond.

In order to provide accommodation for the fishermen and to shelter boats, a small breakwater, 70 feet long, 14 feet wide and 9 feet high had been built at that place during the fiscal year 1908-9.

Last summer, an addition, 20 long feet by 14 feet wide and 8 feet high, was built at a cost of \$149.68. It is a round timber construction, ballasted with stone.

The work was commenced on July 19 and completed on the 25th of the same month and has been carried on by day labour.

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YAMACHICHE RIVER.

The Yamachiche river takes its rise in the Laurentide mountains, flows through the county of St. Maurice and empties into Lake St. Peter, about 16 miles above Three Rivers.

The river is navigable at the outlet for a distance of about $1\frac{1}{2}$ miles, to the first bridge in the village, during the season of spring freshet.

Population of the village, 1,099; of the parish, 2,194. Export: hay, &c.

From July 5 to 29, 1909, dredging was done as per articles of agreement entered with The W. J. Poupore Co. Ltd., who had the dredge *Prince Willie* at work on the shoals on Lake St. Peter, opposite the outlet of the Petite Rivière Yamachiche, at a distance of 4,500 feet south of the entrance, where 29,108 cubic yards of sand and clay were removed, on a distance of 3,168 feet by 40 feet wide, for a 6-foot channel leading to the ship channel.

The total expenditure during the fiscal year ending March 31, 1910, amounted to \$4,571.41.

YAMASKA RIVER.

This river takes its rise in the township of Bolton in the county of Brome; it forms an outlet for several large lakes, and has a course of about 90 miles. It flows through the counties of Brome, Missisquoi, Rouville, St. Hyacinthe, Richelieu and Yamaska, and empties into the head of Lake St. Peter on its southern side, 8 miles below Sorel.

The river is navigable at the outlet, to the foot of the first rapid of St. Aimé for boats drawing less than 4 feet during the low water season, for a distance of 7 miles from the entrance to the Yamaska lock, and 13 miles above.

From June 3 to 20, the dredge *Pontiac*, the property of The W. J. Poupore Co., Ltd., resumed dredging on June 3, 1909, commencing at the shoal at the crossing below the lock, being 37,000 feet above the outlet, where three cuts were made for a 5-foot channel at low water, removing 13,101 cubic yards of clay and sand on an average distance of 537 lineal feet.

Another cut was made at 'Île St. Jean crossing' by the same dredge, *Pontiac*, from June 21 to July 1, at 10,000 feet below the lock and 28,000 feet above the outlet, where 10,627 cubic yards of clay and sand were removed on the western side of the landmarks for a distance of 1,140 lineal feet.

Another dredge *Prince Willie*, owned by the same company, continued the work left by dredge *Pontiac*, from July 1 to 3, 1909, removing 2,914 cubic yards of clay and sand.

The expenditure during the fiscal year ending March 31, 1910, amounted to, \$4,887.05.

PROVINCE OF ONTARIO.

AMHERSTBURG.

Amherstburg is a town, in the county of Essex, in the township of Malden, and is situated on the east bank of the Detroit river, about 5 miles from Lake Erie, and 15 miles south of the city of Windsor, to which place it is connected by an electric car service. The Michigan Central railway also runs into Amherstburg. Population about 2,500. It is one of the oldest settlements in Ontario and a port of entry. It is a port-of-call for the steamers running between Detroit, Amherstburg and Bois Blanc island, as also for boats running to Pelee island. A large number of tugs, dredges and other craft are coaled and secure supplies at this point. The maximum draught of boats which approach the docks is about 17 feet.

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On June 15, 1909, authority was received to expend, by day labour, the sum of \$500 for the removal of boulders in front of the docks.

Arrangements were made with Mr. J. G. Mullen, of Amherstburg, to perform the work, utilizing, through the courtesy of the United States government, as soon as it could be secured, their large derrick scow and other plant.

Operations were commenced on August 3, 1909, and were continued until November 6, following, when work ceased owing to the grant having become expended.

During the above period, some four scow loads of boulders aggregating 270 cubic yards, which had formed a serious obstruction in front of the ferry dock, were raised and removed. After this obstruction was removed, the area in which it laid was left with a depth of 18 feet of water, below L.W.L., excepting close to the dock, where a depth of 17 feet was left. The work performed removed a great source of danger to the ferry boats approaching the dock for landing purposes.

The total expenditure during the fiscal year 1909-10, is \$500.

ARNPRIOR.

Arnprior (population, 4,500), county of South Renfrew, is located at the mouth of the Madawaska on the south shore of Chats lake, which latter is an expansion of the Ottawa river, navigable for 20 miles.

In 1908, parliament voted \$4,000 for a wharf at this place, and a by-law having been passed October 5, transferring the old wharf to the Crown, work was begun October 12, 1908. The piers were found to be too rotten for reconstruction, however, and work was discontinued October 19, after \$874.63 had been spent. And later, a more rational wharf was designed. The \$3,125.37 having lapsed, \$2,000 was authorized June 15, 1909, from harbours generally, Ontario, and work begun on the new reinforced concrete structure, September 22, 1909, by day labour, and continued till January 7, 1910.

During this period a further sum of \$3,100 was authorized from same appropriation to carry on the work, and again on February 26, 1910, \$2,500 was authorized.

Work was re-commenced February 28, 1910, and on April 1, was nearing completion.

The wharf is of reinforced concrete on pile-work and extends 126 feet at a height of 8½ feet above M.L.W. The landing face is 72 feet long (including ice-breaker), and draws 9 feet. All pile work is braced under water.

Expenditure to March 31, 1910, is \$6,615.58.

BARRIE.

Barrie, Simcoe county, is situated on Kempenfeldt bay, an arm of Lake Simcoe, and is 66 miles northwest of Toronto.

On July 26, last, authority was given to expend the sum of \$25 in repairs to the wharf by day labour.

Work was commenced August 7, and completed August 14.

The work consisted in the renewal of parts of the decking and waling for about 20 feet on the east side of the wharf.

In doing this work some 225 feet B.M. hemlock and 25 lbs. iron were used.

Total expenditure for fiscal year, 1909-10:—

| | |
|-------------------------------------|---------|
| Labour and superintendence. | \$19 50 |
| Materials. | 5 50 |
| | <hr/> |
| | \$25 00 |

BELLE RIVER.

Belle River, Essex county, is a prosperous village situated on the south shore of Lake St. Clair and on the London & Windsor Division of the Grand Trunk rail-

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way, 93 miles from London and 17 miles from Windsor. It is a French settlement of about 1,000 inhabitants. It is a harbour of refuge for light draught craft when crossing Lake St. Clair. The traffic into the port consists principally of the importation of sand, gravel, lumber and other building materials. Several fishermen work out of this harbour.

On June 15, 1909, authority was received to expend the sum of \$250 by day labour, in performing repairs required to sheet piling, &c.

The work was performed between September 13 and 25, 1909, and consisted in the construction of 81 lineal feet of sheet-piling at inner end of and on easterly side of the harbour. Main piles of oak 12 feet long were driven at intervals of 6 feet and capped with a 4-inch by 8-inch timber, and against which the sheeting is driven and securely spiked.

The driving of this sheet-piling has completely stopped the erosion which was occurring to the roadway adjoining the dock. Other minor repairs were made to the other sheet-piling.

All new timber was given two coats of carbolineum avenarius above low water level.

It is expected that the passenger and freight boat running regularly between Chatham and Detroit will call daily at this point, after a turning basin at the outer end of sheet-piling on easterly side of harbour is provided.

In the performance of the above mentioned work some 2,022 feet B.M. of timber, 144 lineal feet of cedar piling and approximately 900 lbs of iron were used.

The total expenditure during the fiscal year 1909-10, is \$246.35.

BELLEVILLE.

Belleville, Hastings county, is situated on the north shore of the Bay of Quinté. Population, 11,000. It is the county town.

On August 24 last, authority was given to have the Windsor Dredging Company dredge the necessary excavation for the accommodation of the Ontario Fisheries Inspection boat *Navarch*, to a depth of 10 feet for the sum of \$300.

The material removed consisted of stiff mud, sawdust and hard heads, and the quantity removed amounted to 972 cubic yards, which were all overcast to the south of the slip.

This work commenced on August 25 and was completed on August 27.

Total expenditure for fiscal year 1909-10, was \$300.

BEWDLY.

Bewdly, Northumberland county, is situated at the west end of Rice lake and is a village of some 50 inhabitants. A large portion of the surrounding country, which is rich in agriculture, is tributary to this place.

On June 15 last, authority was given to expend the sum of \$1,000 in the completion of this wharf by day labour, and on December 24 last, a further sum of \$400 was authorized.

Work was commenced July 9 and carried on till March 31, and consisted in the driving of 56 feet of piling on the south side and the construction of a stone approach 30 feet wide at the shore and 20 feet wide where it adjoins the timber wharf, having a length on the north side of 66 feet and on the south side 56 feet.

In doing the above work some 158 oak piles, 466 ft. B.M. oak, 7,761 ft. B.M. pine, 321½ cords stone and 1,355 lbs. iron were used.

Total expenditure for fiscal year, 1909-10:—

| | |
|-------------------------------------|------------|
| Labour and superintendence. | \$ 619 52 |
| Materials. | 777 88 |
| | <hr/> |
| | \$1,397 40 |

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BLANCHE RIVER (MAIN BRANCH).

The Blanche river, Nipissing district, empties into Lake Timiskaming near the Quebec boundary. This stream, navigable for 26 miles to Tomstown, is used by settlers, lumbering or other interests, as an outlet. On account of landslides, the bed of the river is much obstructed by snags. In 1905, work of removing these was started.

Parliament at its last session, 1909, granted \$6,500 to continue the improvements on this river and on the south branch above Charlton.

Owing to the Lake Timiskaming waters having remained at least 3 feet above normal and 5 feet higher than the previous season, further improvement of the Blanche was not considered urgent. The dredge pile driver, with plant, built 4 years ago, was kept busy during the whole of the construction season at other points on the lake.

The plant was overhauled, by day labour, and improved considerably during the spring and summer of 1909 at a cost of \$1,934.62. In October and November, headquarters were transferred from Haileybury to the new shipyard 2 miles north. Building of sheds, office, ways, &c., and hauling out of plant cost \$3,583.32.

Expenditure for fiscal year ended March 31, 1910, was \$5,517.94.

BLANCHE RIVER (SOUTH BRANCH).

The south branch of Blanche river flows southeasterly parallel to or about 11 miles northeast of the Montreal river. Navigation on this stream has been extended 38 miles above Charlton, which is the terminus of a spur on the Timiskaming and Northern Ontario railway, and a transfer point for some of the traffic to the Elk lake or Gowganda mineral district.

At its last session, 1909, parliament granted \$6,500 to continue improvements on this water course and the main branch, which forms part of the Lake Timiskaming navigation.

Work of improvement was resumed September 14, and discontinued October 9, 1909, by day labour.

In September and October, the snags, spoiled on the banks along the navigable portion during the previous season, were burnt. In all, 11 waste heaps were partly burnt or decked up; 17 heaps completely burnt, and 5 heaps left on high banks above flood level.

The work consists of removing snags or dead wood jams and cutting brush-wood, uprooted or overhanging trees in narrows between lake expansions as well as in the upper or low reaches of this river. Cost of work, \$282.38.

Maintenance and improvement of plant and inspection has cost \$155.86.

BLIND RIVER.

Blind river is a village situated on the north channel of Lake Huron, district of Algoma, and is a station on the Canadian Pacific railway; extensive lumbering operations are carried on at this place.

Population, 2,500.

On September 16 last, authority was given to expend the sum of \$4,000 on repairs to the wharf by day labour, which works were rendered necessary owing to the destruction, by fire, of the warehouse and a portion of the wharf on which it stood and portions of the driveway.

Work was commenced September 20 last and carried on till November 23, when it was suspended till February 1, and completed March 22.

The work consisted in the entire reconstruction of a warehouse 140 feet in length by 40 feet in width, also renewing the foundation thereof and portions of the driveway and making slight repairs to the decking.

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In doing this work, some 70,000 shingles, 82,211 feet B.M. hemlock, 22,088 feet B.M. pine, and 3,096 lbs. iron were used.

Total expenditure for fiscal year, 1909-10:—

| | |
|--------------------------------------|------------|
| Labour and superintendence.. | \$1,669 75 |
| Materials.. | 2,191 89 |
| | <hr/> |
| | \$3,861 64 |

BOWMANVILLE.

Bowmanville, Durham county, (or Port Darlington) is situated on the north shore of Lake Ontario, 43 miles east of Toronto by rail on the main line of the Grand Trunk railway, between Toronto and Montreal. Population, 2,800.

This harbour was built by the municipality, and consists of two parallel piers at the mouth of a small creek. The west jetty is 800 feet in length by 30 feet in width except at the outer end where it is 60 feet in width for a length of 240 feet.

The departmental dredge *Sir Richard* was engaged at this place from September 6 to November 6 and excavated some 23,000 cubic yards of material, scow measurement, in improving the channel between the piers and the approaches.

BROCKVILLE.

The ruins of the old piers of the Canadian Pacific railway ferry dock at the southwest end of the coal dock; the old car ferry slip, and an old crib at the south end of the new steamboat dock, were removed. Dredging was also done to a depth of 14 feet at the Canada Coal Company's dock on both sides of the old pier inclosing Tunnel bay, along the front of the steamboat dock and adjacent to the city waterworks dock.

BRUCE MINES.

Bruce Mines, district of Algoma, is situated on the north shore of Lake Huron, 45 miles southeast of Sault Ste. Marie. Population, 300.

On June 15 last, authority was given to expend the sum of \$800 in repairs to the wharf by day labour.

Work was commenced March 1 and completed March 7.

The work consisted in driving a cluster of piles on the northeast corner of the wharf and securely fastening them together with iron bands, also gravelling the approach.

In doing this work, some 73 cubic yards of gravel, 5 piles and 300 ft. B.M. of lumber were used.

Total expenditure for fiscal year, 1909-10:—

| | |
|--------------------------------------|----------|
| Labour and superintendence.. | \$ 50 75 |
| Materials.. | 76 35 |
| | <hr/> |
| | \$127 10 |

BURK'S FALLS.

Burk's Falls, district of Muskoka, is a village of 700 inhabitants, situated on the Magnatawan river, and is on the Grand Trunk railway, 56 miles south of North Bay.

On July 8 last, authority was given to expend the sum of \$450 in improvements to the wharf at this place by day labour.

Work was commenced August 19 and completed October 15, and consisted in the construction of a waiting-room 20 by 20 feet added to the end of the government warehouse, and the construction of a covered platform 5 feet in width leading from the wharf to the railway platform. The structures received two coats of paint.

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In doing the above work some 2,916 ft. B.M. hemlock, 500 ft. B.M. birch, 2,700 ft. B.M. spruce, 219½ lbs. iron, 240 ft. B.M. pine, 164 lineal feet cedar and 60 ft. B.M. pine were used.

Total expenditure for fiscal year, 1909-10:—

| | |
|--------------------------------------|----------|
| Labour and superintendence.. | \$154 00 |
| Materials.. | 287 03 |
| | <hr/> |
| | \$441 03 |

BURLLEIGH FALLS.

Burleigh Falls, Peterborough county, is a summer resort at the head waters of Stoney lake.

On January 8 last, authority was given to expend the sum of \$550 in repairs to the wharf by day labour.

Work was commenced on January 20, and completed March 12.

The work consisted in placing the superstructure in position, as it had been shifted by an ice shove, also sheathing the face of same and filling entire structure with stone and making other general repairs found necessary.

In doing the above work some 289 lbs. iron, 3,278 feet B.M. pine and 40 cubic yards gravel were used. The stone for filling was secured free of charge.

The total expenditure for fiscal year, 1909-10:—

| | |
|--------------------------------------|----------|
| Labour and superintendence.. | \$386 50 |
| Materials.. | 159 20 |
| | <hr/> |
| | \$545 70 |

BURLINGTON CHANNEL.

Burlington channel, Wentworth county, is simply a cut through a piece of low-lying land which separates Lake Ontario from a large sheet of water called Burlington bay thereby enabling vessels to reach the wharfs at the city of Hamilton. Over this we have erected a swing bridge. The cut is 120 feet in width, and on the northerly side has a cribwork pier 2,326 feet in length, and on the southerly side a pier 2,722 feet in length, of which 2,210 feet is entirely of crib and pile work, and the remaining portion of 512 feet has a substructure of crib and pile work and a concrete superstructure having a width varying from 23 feet to 40 feet at the outer end. The all cribwork portion of this pier is 23 feet in width. The Department of Marine and Fisheries has erected a concrete lighthouse on the east or outer end of this south pier.

On May 10 last, authority was given to expend the sum of \$500 in repairs to the piling at the west end of the south pier by day labour.

Work was commenced May 31, and continued till June 26, and then from December 1 to January 28, when it was completed.

The work consisted in the straightening of the line of face-piling on the channel side and reinforcing same, where necessary, with heavy iron rods extending across the pier.

In doing this work, some 1,000 feet B.M. pine and 2,335 lbs. iron were used.

On September 21, last, authority was given to expend the sum of \$150 in the construction of a concrete sidewalk by day labour, and this work was performed during the month of October under the supervision of our bridge tender, and consisted in the construction of 157½ feet of concrete walk, 118 feet of which is 6 feet wide and 39½ feet is 3 feet wide, also 90 square feet was constructed as an approach to the bridge tender's house, and 30 square feet in a crossing.

At the last session of parliament, the sum of \$50,000 was appropriated for the reconstruction of the south pier at this place, and on May 27 last, authority was given to proceed with the work by day labour.

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Work was begun on June 8 and closed for the season on December 20.

The work consisted in the construction of new concrete superstructure 400 feet in length, having a width varying from 23 feet 10 inches to 28 feet with a parapet wall along the south side to which is attached a hand rail. The superstructure was placed on pile foundation and new cribwork foundation where necessary. This work adjoins the portion constructed last year.

In doing this work, some 63,557 lbs. iron, 2,102 barrels cement, 110,429 feet B.M. hemlock and pine, 2,250 cubic yards sand and gravel, 3,781 cubic yards stone, 3,914 lineal feet oak and tamarack piling, and 2,112 feet B.M. oak were used.

CAPE CROKER.

Cape Croker, Bruce county, is an Indian settlement and reservation on the west shore of the Georgian bay, 15 miles northeast of Wiarton. Population, 200.

On August 7 last, authority was given to expend the sum of \$2,582.67 of which amount \$2,000 was contributed by the Department of Indian Affairs, and the remainder by this department for the completion of the wharf extension by day labour.

Work was carried on from August 14 to September 30 and consisted in the completion of an extension to the wharf at the Portage, 80 by 20 feet composed of close-faced cribwork filled with stone.

In doing this work, some 3,256 lbs. iron, 5,000 ft. B.M. tamarack, 100 ft. B.M. pine and 2,595 ft. B.M. cedar were used.

Total expenditure for fiscal year, 1909-10:—

| | |
|-------------------------------------|------------|
| Labour and superintendence. | \$ 822 76 |
| Materials. | 585 58 |
| | <hr/> |
| | \$1,408 34 |

COBOURG.

Cobourg, Northumberland county, is a large town on the north shore of Lake Ontario, on the main line of the Grand Trunk railway, 66 miles east of Toronto. Population, 5,000. The large ferry, *Ontario No. 1*, plies between this port and Charlotte, N.Y., the year round bringing to Canada immense quantities of coal for the Grand Trunk railway. She also carries a large number of passengers. Cobourg is also a port of call for the regular passenger boats plying between Toronto and Montreal.

At the last session of parliament, the sum of \$60,000 was appropriated for the extension of breakwaters, dredging, &c., and on August 14 last, authority was given to expend the amount.

On August 18, 1908, a contract was awarded to the Randolph Macdonald Co., for the sum of \$139,000 to extend the western breakwater 350 feet and the eastern breakwater 425 feet.

Work, this season, commenced May 12 and was carried on till December 22.

The extension of the western breakwater is practically completed, also the construction of the substructure of the eastern breakwater; one crib for which has been launched and the other is about ready. These cribs are 106 feet in length by 35 feet width in the bottom and 30 feet width on top.

On June 28 last, authority was given to expend the sum of \$10,000 in dredging, the work to be performed by Mr. W. E. Phin at 15 cents per cubic yard, scow measurement.

This work commenced June 29 and closed for the season on August 7. The work consisted in deepening and widening the channel and approaches and in doing this, some 66,814 cubic yards of material were removed.

It was necessary that a light should be maintained on the centre pier, a portion of which is wrecked, and Mr. R. B. Stott was placed in charge of same.

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Some 13 old piles, along the westerly side of the east pier which were a menace to vessels were removed.

Also an oak fender which formed an obstruction to navigation was removed.

Total expenditure for fiscal year, 1909-10, is \$65,957.55.

COLBORNE.

Colborne, Northumberland county, is situated on the north shore of Lake Ontario, about 14 miles east of Cobourg.

Population, 1,000.

On June 1, last, authority was given to expend the sum of \$200 in repairs to the wharf and approach by day labour.

Work was commenced June 17, and completed July 12.

The work consisted in placing large stone as a parapet on the lake side for the entire length of the approach, which is 350 feet long and renewing the decking of the wharf where necessary.

In doing the above work, the quantity of stone required was procured in the neighbourhood without cost.

Total expenditure for fiscal year, 1909-10, is \$200.

COLLINGWOOD.

Collingwood, Simcoe county, is situated on the south shore of the Georgian bay, 94 miles by rail from Toronto. It is the terminus of the Northern and Hamilton and Northwestern railway. There is an extensive trade in shipbuilding, grain and lumber, and it is the starting point for the steamers for Owen Sound, Sault Ste. Marie, Parry Sound, &c. Population, 5,000.

No work was done during the past season, with the exception of the inspection of the removal of the cofferdam at dry dock No. 2.

Total expenditure for fiscal year, 1909-10 is \$91.

CUMBERLAND.

Cumberland village, Russell county, is located on the Ottawa river, 16 miles below Ottawa, 2 miles south of Buckingham Junction of the Canadian Pacific railway north shore line. Besides the regular ferry service, the public wharf, built in 1905, provides for considerable traffic from passenger and freight boats plying on the Ottawa river.

During the extraordinary high water period, in May last, the wharf was submerged. To maintain important traffic, a temporary walk was maintained and later, minor repairs were effected at a cost of \$22.35.

CURTIS LANDING.

Curtis landing, Northumberland county, is situated on the south shore of Rice lake, distant some 15 miles from Cobourg.

On June 28 last, authority was given to expend the sum of \$25 in repairs to the approach to the wharf by day labour, but, no work was done owing to the fact that it is the intention of the residents to petition for some further extensions to the structure.

Up to date there has been no expenditure.

DAWSON POINT.

Dawson point is a landing on Lake Timiskaming, near Haileybury, in the district of Nipissing.

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The wharf was damaged by the spring flood in 1909, so work of repairs were carried out on March 25-26, 1910, by day labour, in resetting riprap along approach, which was disturbed by logs and in repairing sheeting, hove in by steamboat, at a cost of \$30.

DETROIT RIVER.

Detroit River. The lower portion of the Detroit river, Essex county, south of Amherstburg and on the east bank of which the township of Malden is located, is noted for the fact that it is by far the busiest river in the world. Owing partially to the large size and number of vessels passing along this shore, considerable erosion occurs to the banks, and at the last session of parliament the sum of \$1,000 was voted towards completing the erection of stone breastwork along this Malden front to prevent further erosion. On June 15, 1909, authority was received to expend the grant by day labour.

Operations were commenced on July 9 and ceased on July 31, 1909, the grant being then expended.

An arrangement was made with Captain Frank Hackett, of Amherstburg, to furnish and place stone where directed at the rate of \$2 per cubic yard, also to provide derriek scow with tug and all necessary labour at the rate of \$3.30 per hour, for lifting boulders which had been previously deposited some distance from shore by the United States government, and the placing of such boulders on the breastwork. In the performance of this work, some 327 cubic yards of stone were provided and placed and 95 hours of work with derriek scow performed. The execution of same raised, strengthened and placed in a much better condition, a considerable portion of the breastwork which had been built in previous years, and which work has shown good evidences of providing the required protection to this shore line.

The total expenditure during the fiscal year 1909-10, is \$1,000.

DETROIT RIVER TUNNEL.

This tunnel is under construction, by the Detroit River Tunnel Company, to provide connection for railway traffic between Windsor, Ontario, and Detroit, Mich., U.S.A., in accordance with charter granted and plans approved of by order in council on July 12, 1906.

Operations were commenced in August, 1906, and the work has been prosecuted with all possible vigour since that date. Various changes have been made in the work, all of which were duly reported on and received the approval of the Governor in Council. Frequent inspections were made of both the subaqueous portion and approaches of this work, and every care taken to see that the work was carried out strictly in accordance with the plans and specifications approved of by this government, while various steps were taken from time to time to also safeguard the interests of navigation on this most important and busy waterway.

The work is completed with the exception of the laying of a small amount of track in the approach tunnels and the whole of the track in the subaqueous portion, also the electrification of tunnel and the completion of terminals at both ends of the work.

Soundings taken in the river, late last fall, indicated that the required depth had not been left in all places over the tunnel; such matter will, however, be rectified at an early date and before the final completion of the work.

It is anticipated that the tunnel will be open for use on or about July 4 next. This large and important work, the subaqueous portion of which was of an entirely novel character, has been built in a most successful manner, and presents an excellent appearance in regard to both stability and finish.

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FRENCH RIVER.

French river, District of Nipissing, flows through the district from Lake Nipissing to the Georgian Bay. Where it leaves Lake Nipissing there are five branches of the river.

During 1907, two wooden dams were constructed on the main outlets of the river for the purpose of maintaining Lake Nipissing at a uniform level as an aid to navigation, and Mr. Henry Hogarth, of Cache Bay, was placed in charge of the dams to attend to the manipulation of same for the regulation of the water level.

On July 31, the dams were removed.

Total expenditure for fiscal year, 1909-10, is \$371.46.

GARDEN ISLAND.

Garden island is situated opposite Kingston, in the River St. Lawrence.

A channel was dredged across the shallows at the west of the island to give access to the Calvin Company's piers from deep water for vessels of 14 foot draft; the channel was made 30 feet wide on a length of 2,500 feet.

GODERICH.

Goderich is the county town of the county of Huron, situated on the easterly shore of Lake Huron, at the mouth of the Maitland river, about 68 miles from Sarnia, and 63 miles from London. It is the termini of the Buffalo and Goderich branch of the Grand Trunk railway, and of the Guelph and Goderich branch of the Canadian Pacific railway. Population, about 6,000. It is a favourite summer resort. It possesses many industries and is a progressive and thriving town. Located on the harbour front is one of the largest flour mills in Canada, capacity being 1,200 barrels per day. In 1906, a new elevator was completed, of a most modern type, being reinforced concrete and with a capacity of one-half million bushels, and an extension is now about to be constructed to this elevator providing for an additional storage of one-half million bushels. In addition to this, the Western Canada Flour Mills Company, Limited, of Goderich, are about to construct a modern elevator with a storage capacity of one-half million bushels. It is a port of entry and during the past season, three lines of passenger and freight steamers called regularly. The grain traffic is increasing rapidly and during last season, approximately 8,214,782 bushels of grain were brought in, either from Port Arthur or Fort William, by deep draught vessels. A large amount of coal, ties, steel rails, timber, &c., were landed at this port. The number of vessels which entered the port during the season amounted to 191, with registered tonnage, 151,449. It is practically the only harbour of refuge for deep draught vessels on the easterly shore of Lake Huron, and it is an excellent distribution point for materials brought from the far west. The Canadian Pacific Railway Company have signified their intention of establishing a line of boats during the coming summer to call regularly at this point.

The maximum draught of vessels which enter the port is about 19 feet 6 inches when water is at level. Owing to the low stage of the water during the latter part of the seasons of 1908 and 1909, and of the decided tendency of lowering of water throughout the season on Lake Huron it has lately been found necessary to lower the zero or datum level of all dredging to be done in future at this point; the new established datum being at an elevation of 578.50 above mean tide, New York, which is the same datum level as utilized by the United States Lake Survey Department in constructing their charts.

At the last session of parliament, the sum of \$5,350 was voted for repairs to piers, &c., and on May 27, 1909, authority was received to expend the grant by day labour.

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Repairs to Piers, &c.

Operations were commenced on July 1, 1909, and continued until December 31 following, when work was suspended owing to weather conditions. It was again resumed on February 14 and continued until March 31, 1910. Work performed was as follows:—

North Pier.—Forty-eight lineal feet of sheathing protecting three corners at outer end of pier were renewed; six new mooring posts were placed; 220 lineal feet of face timbers 12 inches by 12 inches hemlock were renewed; two coats of Carbolineum Avenarius was given to all new material, as also to 425 feet of decking of outer end of pier which had been renewed in the latter part of past fiscal year. Other minor repairs were performed.

River Breakwater.—Fifteen reinforced concrete mooring posts were constructed and placed at 100-foot intervals and securely fastened to dock, 12 running feet of sheet-piling renewed at outer end of and at northwest corner of this pier, the sheathing being 10 feet long with three iron bands.

South Pier.—Decking of 195 lineal feet of inner end of pier was renewed with 3-inch plank; 25 additional lineal feet of outer portion of pier was likewise renewed in hemlock; other incidental repairs made to decking and face timbers; 10 iron ornamental lamp posts with 50 c.p. incandescence Tungsten lamps attached, were erected. The base of these lamp posts were imbedded in concrete blocks and securely bolted to longitudinal timbers in pier; the posts reach to a height of 25 feet above top of pier, and were found to be of great assistance in guiding vessels entering this harbour on dark or foggy nights. The wiring for these lights was constructed last year by this department, and under an agreement that the town would supply the power gratis as long as the lamps with connections were maintained by this department.

In addition, 160 running feet of existing sheet-piling on westerly side of and in inner harbour, which had become completely decayed, was removed and renewed with 8-inch yellow pine sheeting, 20 feet long, driven to refusal. The construction of this sheet-piling will require to be completed during the coming season.

The government scow was pulled out and repaired, and a small skiff 16 feet long was built for use on these works.

In the performance of the above work, some 53,330 feet B.M. of hemlock, yellow and white pine, spruce and elm timber, 11,346½ pounds of iron, 17½ barrels of cement, together with 10 iron standards with necessary attachments, wiring and lamps for lighting south pier, were used.

Dredging.

On June 1, 1909, authority was received to expend the sum of \$5,000 in performing necessary dredging in inner harbour; in channel between piers, and in channel at outer entrance to piers. This amount was subsequently increased by \$600 and \$12,500 on June 28 and September 18, 1909, respectively, making the total grant for dredging during the past season \$18,100.

The contract for the above dredging was re-let to Mr. W. L. Horton, of Goderich, at the prices which prevailed during the previous year, i.e. 35 cents for all material other than rock, and \$4 per cubic yard, scow measurement, for rock.

Operations were commenced on June 11 and ceased on December 14, 1909, when work closed down for the winter. Work was suspended between August 31 and September 21, owing to first grant having been expended. 34,568 cubic yards of clay, sand and gravel and 710 cubic yards of rock were removed, the greater portion of which material was dredged at outer entrance to harbour. The dredging performed to date has proved of great benefit but practically the whole of the inner harbour requires

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to be dredged to a depth of at least 21 feet below extreme low water level in order to accommodate the rapidly increasing traffic.

The total expenditure during the fiscal year 1909-10, is \$20,047.16.

GRAND BEND.

Grand Bend, Lambton county, is a village situated on the easterly shore of Lake Huron, at the mouth of the Sauble river, about 13 miles from Parkhill, the latter place being the nearest railway station. It is also 15 miles from Exeter and about 30 miles south of Goderich. It is a favourite summer resort, and in this respect is increasing rapidly in popularity.

On June 15, 1909, authority was received to expend the sum of \$800 by day labour, in the reconstruction of approach to breakwater pier.

Operations were commenced on July 9, and continued until November 26, 1909, and consisted in the construction of an approach 85 feet long and 10 feet wide, composed of 2 rows of oak piles 10 feet apart, 14 feet long, driven at 5 feet intervals, and fastened together with a 10-inch by 10-inch waling. Three inch pine sheeting was then placed longitudinally on inner face of and spiked to piles from water level up, and 1½-inch iron tie rods through each pile reaches across and from either side of piles, thus tying the two rows together. Space between piling was then filled with stone ballast which was surfaced with gravel. In addition, a channel 155 feet long, 25 feet wide and 4 feet deep was excavated through a bar which had formed during the summer at the entrance to this river, in order to permit of ingress and egress of fishing boats and with a view to assisting freshets in carrying away at least a portion of the bar.

The spring freshets in the early part of March last, were unusually heavy and a large amount of floating ice coming down the river with a rush, damaged the inner end of approach to pier above mentioned; repairs are urgently required to same, as also additional stone filling in the body of the pier.

The traffic at this point is extremely light, due partially to the fact that boats drawing more than 6 feet cannot safely land at pier owing to the formation every year of a sand bar across the mouth of the river. Such bar will most probably continue to form annually until additional protection is provided on southerly side of entrance to river.

In the execution of the work, some 12½ cords of stone, 3,529 feet B.M. of rock elm and pine timber, and 1,250 lbs. of iron were used.

The expenditure during the fiscal year 1909-10, is \$799.29.

GRENADE ISLAND.

Grenadier island is located in the St. Lawrence river about 2 miles east of Rockport, and on the west end thereof Pavilion No. 5 stands, being one of the seven pavilions constructed on various islands in this river.

On June 15 last, authority was given to expend the sum of \$650 in the reconstruction of the pavilion on this island.

The work was performed during August last for the sum of \$650 and consisted in the reconstruction, painting and staving of the pavilion and the fixing and painting of benches and tables therein.

Total expenditure for fiscal year 1909-10, is \$655.

HAILEYBURY.

Haileybury, district of Nipissing, is on the west shore of Lake Timiskaming and is the chief lake port on the route of the Timiskaming and Northern Ontario railway, 108 miles north of North Bay, and 5 miles from Cobalt, the heart of an important mineral district.

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Owing to the extreme flood overtopping the Haileybury dock by 3 feet, the three line pipe railing, 500 feet long on the north side of the approach, required protection from drifting and storm-tossed logs, and a temporary landing over scows had to be maintained for the heavy traffic, work was done May 19 to June 15, at a cost of \$145.30.

The small crib at the inner corner of the 'L,' damaged by being buoyed up and distorted during the flood, was restored (June 16-29) at a cost of \$149.15.

HAWKESTONE.

Hawkestone, Simcoe county, is situated on the north shore of Lake Simcoe, 14 miles east of Barrie, and is on the Grand Trunk railway from Toronto to North Bay.

On May 15 last, authority was given to expend the sum of \$50 in repairs to the stone approach to the wharf by day labour.

Work was carried on from May 22 to June 3, and consisted in placing large stone to protect smaller stone and gravel, to renew approach where eroded by the action of the waves.

In doing this work, some 27 lbs. iron, 5 loads of gravel, and stone secured in the vicinity without charge were used.

Total expenditure for fiscal year, 1909-10, is \$62.16.

HILTON.

Hilton, district of Algoma, is a small village situated on St. Joseph's island, on the north channel of the Georgian bay.

On June 7 last, authority was given to expend the sum of \$2,000 in repairs and renewals to wharf by day labour.

Work was carried on from September 1 till October 30 and from January 10 to 31, when it was completed.

The work consisted in the construction of an addition to the warehouse 12 by 22 feet, also one crib on the south side 30 by 30 feet on which a sheep pen 20 by 20 feet has been erected, also a crib 24 by 7 by 10 feet has been placed on the northwest side and concrete superstructure has been built thereon 24 by 6 by 3 feet, also a small crib 24 by 12 by 16 feet has been placed on the southwest side of the wharf immediately adjoining the work performed last year, also a crib 8 feet wide by 36 feet long has been placed on the west side to fill out the jog; this has been built up to water level and will require concreting on top. The approach to wharf has been filled with stone and gravel for a length of 160 by 22 feet wide and a depth of 3 feet and portions of the old work have been re-planked where required.

In doing this work some 12,464 ft. B.M. hemlock, 603 lineal feet cedar, 4,000 shingles, 145 sacks cement, 2,335 lbs. iron, 919 ft. B.M. hardwood, 310 ft. B.M. pine, 36 loads gravel and 88 loads stone were used.

Total expenditure for fiscal year 1909-10, is \$1,851.01.

HUNTSVILLE.

Huntsville, Parry Sound district, is situated on the Northern Division of the Grand Trunk railway, 145 miles north of Toronto. Population, 2,100.

On May 25 last, authority was given to expend the sum of \$60 in repairs to the wharf by day labour.

The work, which consisted in renewing the planking where required, was performed for the sum of \$50.

Signs warning certain traffic off the wharf were painted and put in place.

Total expenditure for fiscal year, 1909-10, is \$63.

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KINCARDINE.

Kincardine is a prosperous town situated on the east shore of Lake Huron, in the county of Bruce, 39 miles south of Southampton and 32 miles north of Goderich. It is the terminus of the Wellington, Grey & Bruce Division of the Grand Trunk railway. Population, about 3,000. Principal industries of the town are: two furniture factories, salt works, and boiler and machine works. It is the principal summer resort on the east shore of Lake Huron. It is a harbour of refuge and possesses facilities for both imports and exports, either by water or rail; principal imports are coal, wood, lumber, fence posts, ties and fish; principal exports are salt, furniture, iron bridges, boilers, &c. It is a port of entry and a regular port of call for a line of packet freight steamers running between Lake Huron ports and Sault Ste. Marie. The average draught of vessels entering this harbour is 12 feet. The dredging performed annually provides a minimum draught of 14 feet below L.W.L.

The Penetangore river which empties into this harbour is the source of more or less continual trouble as exemplified during the past spring freshet when a large amount of material was brought down in solution and deposited in the harbour, more particularly in the channel between piers, thus increasing the required outlay during the coming season to provide sufficient depth of water to accommodate the traffic.

Dredging.

On May 11, 1909, authority was received to place at work the dredging plant owned by Mr. W. L. Horton, of Goderich, providing he agreed to work at the rate of last year's contract (i.e. 35 cents per cubic yard scow measurement for all material except rock) if renewed, or at such rate as might result if new tenders were called for.

The above plant was ordered to proceed with the work and operations were commenced on May 15, and were continued until June 17, when the grant arranged for this work had become expended. Subsequently, on May 31, authority was received to perform an additional week's dredging on condition that the contractor would await payment until next session; this work was performed, and in all consisted of the widening and deepening of channel at outer entrance to harbour, to depths of 16 and 18 feet below L.W.L.; two cuts to a depth of 14 feet below L.W.L. between piers; one cut along easterly and southerly side of inner harbour to a depth of 14 feet below L.W.L., and one cut along northerly side of inner harbour to a depth of 12 feet below L.W.L. In the performance of this work 11,780 cubic yards of clay, sand and gravel were removed.

Repairs to Piers.

On June 15, 1909, authority was received to expend the sum of \$1,000 by day labour on repairs to piers.

Repairs were started on July 12 and completed on October 27, 1909, and consisted of the renewal of flooring in 3-inch tamarack of 411 lineal feet of north pier, together with the length of 650 lineal feet of 8-inch by 10-inch rock elm waling along face of said pier; the renewal of the decking of 39 lineal feet of east pier in inner harbour, together with general minor repairs on said pier; decking of 131 lineal feet of south pier in inner harbour was renewed, and two mooring posts placed and other general repairs performed. Considerable general repairing was done to the south entrance pier, particularly to the decking.

All new timber was treated with carbolineum avenarius.

These works are at present time in very fair condition and the expenditure as made shows to excellent advantage. In the execution of this work 9,146 lineal feet

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of rock elm and 12,015 feet B.M. of tamarac timber and 600 pounds of iron were used.

Expenditure during fiscal year 1909-10 was \$5,179.63.

KINGSVILLE.

Kingsville is a thriving town situated on the north shore of Lake Erie, in the county of Essex, about 25 miles east of the mouth of the Detroit river, and on the line of the Pere Marquette railway. An electric railway line also runs through this place, between Windsor and Leamington. Population, about 1,800. It is the centre of a very rich farming country an important harbour of refuge, and is the principal point from which the steamers, carrying freight and passengers, run regularly to Pelee Island, Sandusky and Windsor; a large fishing trade is carried on at this point; the main traffic over the docks is lumber, fence posts, and general building materials.

Dredging.

On June 14 last, operations were commenced by the government dredge *Ontario* in dredging in inner harbour to a depth of 14 feet below L.W.L., and work was continued until September 4 last, when dredge was ordered elsewhere.

The work performed consisted of the dredging of the area adjoining and opposite easterly dock in harbour, of an average length of 500 feet and width of 200 feet, also two cuts on the easterly side of entrance to harbour with an average length of 200 feet.

In the performance of the above work, 14,400 cubic yards of sand were removed, and the work done left this harbour with a minimum depth of 14 feet below L.W.L. available for any boats calling at this point, with sufficient turning room in inner harbour.

LAKE TIMISKAMING GENERALLY.

Lake Timiskaming, an expansion of the Ottawa river between Nipissing district in Ontario and Pontiac county in Quebec, is important from a navigation standpoint. There are several public wharfs built on its shore, and other works of river improvement, &c., are constructed from year to year.

In connection with the plant on these waters, see Blanche river, main branch, in this report, in which is given detail of repairs and improvements, and also cost of moving headquarters from Haileybury to the new shipyard, 2 miles north. The accounts were charged in appropriation for Blanche river, as this work could not very well be disassociated from it.

LANCASTER SOUTH.

Lancaster, a post village in Glengarry county, on the St. Lawrence river, and a station on the Grand Trunk railway, 13 miles east of Cornwall. It has 4 churches (2 Presbyterian, Roman Catholic and Methodist), 17 stores, 3 hotels, 1 saw and lumber mill, 1 machine shop, 1 bank (Merchants'), besides telegraph and express offices. Population, about 700.

Lancaster South is situated $1\frac{1}{2}$ miles south of the village proper. The public wharf, built in 1901-2, consists of:—

1. A pile headblock 83 feet long and 73 feet wide, standing 11 feet high in 6 feet of water at lowest level.
2. A pile approach 24 by 20 feet.
3. A stone approach 493 feet long to Water street, by a width of 20 feet at top, and slopes ripped 1 in 2 on both sides; guard railing on both sides formed of two $1\frac{1}{2}$ -inch iron pipes and 6-inch cedar posts every 10 feet.
4. A storehouse 22 by 20 feet and waiting-room 8 by 20 on headblock and on each side of covered 12-foot passageway leading from approach.

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5. A cattle yard 80 by 100 feet at eastern intersection of stone approach and Water street.

From July to October, 1909, extensive repairs costing \$396.54 were made, some 3,500 square feet of flooring were renewed in tamarack as were 250 lineal feet of cap piece and fenders in 8 by 10-inch oak; the cattle yard was fenced; the guard railing, storehouse and waiting-room painted, and the riprap on both sides of approach repaired, and some gravel added.

Work was done by day labour.

LEAMINGTON.

Leamington is a prosperous town, situated on the northern shore of Lake Erie, in the county of Essex, about 37 miles from the city of Windsor, on the lines of the Pere Marquette and Michigan Central railways. Population, about 1,800. It is the centre of a rich fruit raising district. A number of oil wells are being worked in the vicinity of Leamington. It is a port of entry and also a port of call for a steamboat line running between Windsor and Pelee Island. Deep draught tugs also carry considerable freight from this point to Pelee Island and other adjoining places. Maximum draught of vessels utilizing pier at this point is about 11 feet.

On September 14, 1909, authority was received to expend the sum of \$375, by day labour, in performing urgent repairs and renewals required to the decking of the government pier.

Work was commenced on November 2 and completed on November 12 last, and consisted of the renewal of 9,072 feet B.M. of decking, together with other minor repairs and which work left this pier in fair condition.

Total expenditure during fiscal year 1909-10 is \$372.84.

LIONS HEAD.

Lions Head, Bruce county, is a village of some 600 inhabitants, situated on the west shore of the Georgian bay, 22 miles north of Wiarton. There is a large sawmill in operation here and the output is very large.

On January 26 last, instructions were given to enter into an agreement with Messrs. Kastner and Porter to construct an extension 65 by 25 feet of cribwork to the existing wharf at this place for the sum of \$1,800.

Work commenced March 1 and completed May 31.

Total expenditure for fiscal year, 1909-10, is \$2,256.

LITTLE CURRENT.

Little Current, district of Algoma, is situated on Manitoulin island, on the east shore, and is on the north channel of the Georgian bay. It is a regular port of call for towns on Manitoulin island. Large saw-mills are located here. Population, 1,000.

At the last session of parliament, the sum of \$28,000 was appropriated for dredging at this place, and on May 3 last, authority was given to have the work performed by the C. S. Boone Co., at the following prices per cubic yard, scow measurement: rock, \$1.78; other materials, 25 cents.

On June 26, last, authority was given to remove a segment on the north side of the original channel, the chord of which was 700 feet in length and the height of arc 75 feet.

Work was carried on from May 4 to June 18, and then from June 28 to September 20, and consisted in the removal of the segment mentioned, also cleaning up the main channel and carrying same down to grade, viz., 22 feet below low water.

During the season, some 34,085 cubic yards of rock and 1,618½ cubic yards other materials were removed.

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An extensive and complete survey was made of the main channel during the past season, when it was found that the work had been performed very satisfactorily, the bottom being very uniform, and, with only a few exceptions, down to grade.

Total expenditure for fiscal year, 1909-10, \$62,255.89.

L'ORIGINAL.

L'Original, Prescott county, is on the south shore of the Ottawa river, 54 miles below Ottawa, on the Canadian Northern railway. It contains, besides the county buildings, four churches, telegraph office, several insurance agencies, grist and saw-mills, three stores and three hotels. Two weekly newspapers are published in L'Original. Population, 1,000.

For detailed information re construction of wharf see annual report, 1904-5.

Repairs were effected during the period from July 1 to October 9, 1909, at a cost of \$1,999.44. The pilework approach, 660 feet long, 20 feet wide; a portion of the wharf 25 feet wide, of an average length of 46 feet, and the slip, 60 feet long by 10½ feet wide, were replanked with 4-inch hemlock. The stringers were strengthened with hemlock plank and the shore-bents were levelled. The storehouse was replanked on the exposed side and the floor stringers here were replaced. Some planking was also done to restore flooring in bad spots on the outer portion of the wharf.

The work was done under agreement with E. Côté & Cie, at the rate of \$24 per thousand feet board measure of flooring in place, plus minor extras for other repairs.

M'GREGOR'S CREEK.

McGregor's Creek, runs through the city of Chatham, Kent county, and empties into the Thames river. In the year 1882, dredging was performed by the government which necessitated subsequent protection of the banks by sheet-piling, and said sheet-piling has had to be maintained.

At the last session of parliament, the sum of \$7,100 was voted for the renewal of bank protection, and on April 7, 1909, authority was received to expend the sum of \$3,200 in renewing sheet-pile protection work (in rear of properties owned by Mr. W. F. Smith and others), which had become badly decayed and was slipping into the creek.

Arrangements were made with Mr. John Flook, of Chatham, to supply all necessary material and construct the work, for the sum of \$20 per running foot. Operations were commenced on May 6 and were completed about July 6 following, and consisted in the removal of a length of 157 feet of the old sheet-piling, together with a large amount of filling and rubbish in rear of same, and the substituting with close sheet-piling, consisting of 10-inch by 10-inch white oak main piles, 28 feet long driven at 10-foot centres with 8-inch by 8-inch Georgia pine sheet-piles 28 feet long between main piles, double waling built on top and bottom of piling, and the whole tied back with 1½-inch round iron rods to 9 reinforced concrete anchors 4 feet by 6 feet by 1 foot 6 inches located in solid ground from 40 to 65 feet in rear of the piling. All piling was driven to penetrate to underlying hardpan and was cut off at a height of 10 feet above ordinary water level. It was then treated, above ordinary water level, with two coats of carbolineum avcnarius supplied by the department. The work performed has provided great protection to the buildings in rear. With the renewal of 188 feet during the coming season of piling the whole of the pile protection work in this creek will be left either new or in excellent condition.

On May 27, 1909, authority was given to expend the whole of the grant voted during the previous session, and arrangements were made with Mr. John Flook, of Chatham, to continue the renewal of the sheet piling on the south side and at westerly end of this creek, at the same price at which similar work was performed by

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him during the previous season, *i.e.*, \$13.50 per running foot, which included the providing of all necessary material and labour.

This work was performed between August 30 and October 29, 1909, and consisted of the removal of 270 lineal feet of old piling, and substituting the same length by 8 inches by 8 inches Georgia pine sheet piling 28 feet long, extending to a height of 10 feet above water level with double 9-inch by 12-inch upper waling and double 8-inch by 8-inch lower waling; the whole tied back at intervals of 10 feet with double 1½-inch round iron rods to white oak anchor piles 22 feet long, securely driven approximately 15 feet in rear of sheet piling. The timber work, above water level, was treated with two coats of carbolineum avenarius, which was furnished by the department. The whole work presents an excellent appearance and has already proved of great protection against freshets.

The total expenditure during the fiscal year, 1909-10, is \$7,058.84.

MALLORYTOWN.

Mallorytown, Leeds county, is a small town on the main line of the Grand Trunk railway, and is distant 14 miles west of Brockville. Population, 350.

On June 15 last, authority was given to expend the sum of \$3,500 in repairs to the wharf by day labour.

Work was performed from September 1 to November 5, when it closed for the season.

The work consisted in the extension of the existing wharf for a length of 46 feet and a width of 16 feet, some 26 feet of which is to have concrete superstructure, also the removal of the old 'L' some 49 by 12 feet, which had been wrecked by the ice shoves.

In doing the work some 17,350 feet B.M. pine, 8,318 lbs. iron, 26 cubic yards concrete blocks complete, and 110 cubic yards of stone were used.

Total expenditure for fiscal year, 1909-10, is \$2,789.72.

MIDLAND (TIFFIN).

Midland (Tiffin), Simcoe county, is a town of some 5,000 inhabitants, situated on an arm of the Georgian Bay. It is the terminus of the Midland division of the Grand Trunk railway. Large quantities of lumber are shipped from this place, and there is a large smelter in operation.

Including Tiffin, there are three large grain elevators having a total capacity of four million bushels of which the Grand Trunk Pacific railway elevator has two million and the others one million each.

At the last session of parliament, the sum of \$125,000 was appropriated for dredging at Tiffin, and on May 4 last, authority was given to proceed with the work, same to be performed by the Canadian Dredge and Construction Co., at the following prices per cubic yard, scow measurement: Boulders, \$2.25; other material, 29 cents; bucket measurement, boulders, \$1.75; other material, 29 cents.

Work was commenced May 6, and suspended for the season November 16, and consisted in dredging in slip to Grand Trunk Pacific elevator, the outer portion of which is 1,600 feet in length, varying in width from 276 feet to 312 feet, also dredging a slip 500 feet in length, immediately in front of the elevator, 80 feet in width, all to a depth of 25 feet.

During the season, the dredges removed some 41,324 cubic yards of rock and 150,024 cubic yards other material.

Total expenditure for fiscal year, 1909-10:—

| | |
|--|--------------|
| To be paid Canadian Dredge and Construction Co.... | \$136,526 46 |
| To paid inspection.. | 555 03 |
| | <hr/> |
| | \$137,081 49 |

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MONETVILLE.

Monetville, Nipissing district, is the centre of a prosperous farming region on the west arm of Lake Nipissing. The village is located on Shanty lake, 4 miles beyond the head of Lake Nipissing navigation.

Owing to the insufficiency of amount authorized (1,000 from Harbours Generally, Ontario) to complete the rock cuts near Monetville, and the proposed improvement of French river dams, regulating Lake Nipissing levels, this work has remained in statu quo during the past season.

An outstanding account of \$20.60 for freight on goods purchased in 1908-9 was paid. Timber ordered in March was sawn in July, at a cost of \$96.84. Maintenance of plant and minor work cost \$30.25, part of which was paid (\$22) with supplies on hand and not required.

NAPANEE.

Napanee, Lennox and Addington county, is situated on the Napanee river, some 6 miles from where it empties into the Bay of Quinte. A number of manufactures are located at this place. Population, 3,200.

On September 2 last, authority was given to have the Windsor Dredging Co. perform certain dredging on this river at the rate of 14 cents per cubic yard, scow measurement, for which the sum of \$3,000 was authorized.

Work was commenced September 9 and completed October 6, and consisted in dredging to a depth of 12 feet below low water at various points in the river where most required; the cuts varying in width from 25 to 75 feet. The upper cut is 1,600 feet in length and 25 feet width and the lower one is 750 feet in length by 75 feet width.

The dredge removed some 20,000 cubic yards of other materials.

An old wreck lying in the channel was removed.

Total expenditure for fiscal year, 1909-10, is \$2,990.25.

NEWCASTLE.

Newcastle, Durham county, is situated on the north shore of Lake Ontario, 47 miles east of Toronto. It contains large woollen mills, a tannery and an implement factory. Population, 700.

The departmental dredge *Sir Richard* was at this place from November 10 to about November 19 and dredged one cut 365 feet long by 25 feet wide and about 3 feet 6 inches in depth and in so doing removed some 3,100 cubic yards of other materials, scow measurement.

OSHAWA.

Oshawa, Ontario county, is a town of some 5,000 inhabitants, situated on the north shore of Lake Ontario, on the main line of the Grand Trunk railway, 34 miles east of Toronto. It has a large number of important manufactures.

On June 15 last, authority was given to expend the sum of \$600 in repairs to sheds by day labour.

Work was commenced December 1 and carried on till December 7, then from March 16 to 26.

The work consisted in repairing the sheds and the tramway to same also the decking of the wharf.

In doing this work some 13,444 ft. B.M. pine, 3688 ft. B.M. hemlock and 520 lbs. iron were used.

Total expenditure for fiscal year 1909-10, \$583.28.

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OTONABEE RIVER (PETERBOROUGH).

Otonabee River, Peterborough county, is an important waterway flowing through the town of Peterborough, emptying into Rice lake and connecting same with Stoney lake.

On August 12 last, authority was given to forward, for payment, all outstanding accounts in connection with the construction of the wharf on this river at the foot of Wolfe street, Peterborough. This wharf is 288 feet from the south end, and return at right angles to above 38 feet in length, 30 feet of the surface of which is 18 inches lower than surface of revetment wall proper and is used as a small boat landing.

Total expenditure for fiscal year, 1909-10, \$605.17.

OWEN SOUND.

Owen Sound, Grey county, is situated at the mouth of the Sydenham river which flows into the head of Owen Sound, an arm of the Georgian bay. It is the centre of an extensive agricultural district, and is the terminus of the Grand Trunk railway branch of the Georgian Bay and Lake Erie division, also of the Canadian Pacific railway, Toronto, Grey and Bruce division. There are several lines of steamers running to and from Owen Sound.

On May 26 last, authority was given to expend the sum of \$750 in dredging at the Canadian Pacific railway freight sheds, the work to be performed by Mr. A. F. Bowman at the rate of 25 cents per cubic yard, scow measurement.

The work was carried on from June 21 to 28, and consisted in the removal of a shoal spot alongside the Canadian Pacific railway freight sheds, on which vessels drawing about 17 feet of water touched.

In doing this work, some 2,950 cubic yards other materials were removed.

Some ten old piles that were in front of the government revetment wall were removed as they were a menace to vessels tying up alongside.

Total expenditure for fiscal year, 1909-10, is \$800.

PELEE ISLAND (WEST DOCK).

Pelee Island is situated on the western end of Lake Erie, in lat. 41° 46' N., long., 28° 45' W., about 35 miles southeast from the mouth of the Detroit river, and 16 miles south of the town of Kingsville, Essex county. Population of the island, about 650. The products of the island are grapes, wine, fruit and farm produce. The soil is particularly rich and fertile. A large number of hogs are raised. Owing to the isolated position of this territory, the docks on this island are of very great importance and service to the inhabitants. A regular line of steamers calls between three and four times a week when weather permits. Deep draught fishing tugs call daily and carry a large amount of fish to the mainland. In addition to the exportation of the above-named products of the island, lumber, shingles, coal, flour, machinery and general merchandise were brought in over this dock. It is a port of entry. Traffic is increasing steadily. Maximum draught 11 feet.

At the last session of parliament, the sum of \$5,500 was voted for the extension of west dock, and a contract for the sum of \$4,800 was awarded on December 31, 1908, to Messrs. A. M. McCormick & Son.

Active operations were commenced on May 6, 1909, and work was completed on July 31 following, and consisted in the construction of close-faced cribwork, 50 feet long, 40 feet wide and 23 feet high, filled with stone ballast, and reaching to a height of 6 feet above L.W.L. at outer end, also a return of 10 feet on each corner was protected with 4-inch sheeting, as also with large angle corner iron plates. This work has already proved of great benefit to the surrounding district, and the amount of traffic over this dock is increasing annually.

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Repairs to Warehouse, &c.

On July 21, 1909, authority was received to expend by day labour the sum of \$400 in the building of an extension to existing warehouse, as the building was found to be much too small to accommodate the amount of material frequently handled over it. Work was commenced on August 2 and completed on October 21, 1909, and consisted in the construction of an extension 20 feet wide and 30 feet long to the warehouse. In addition, the greater part of the decking of the older portion of the dock was repaired and the whole dock left in good condition.

In the performance of these repairs and renewals some 5,534 feet B.M. of hemlock and pine timber, 263 pounds of iron and two and a half gallons of paint were used.

Construction of Embankment.

On June 29, 1909, authority was received to expend the sum of \$2,800 in bank protection work at northerly end of this island, the work to be performed by the Chatham Dredging and General Contracting Company, of Chatham, Ontario, at the rate of 10 cents per cubic yard bank measurement, and which amount was subsequently increased by the sums of \$1,600 and \$500 on August 23 and October 6, 1909, respectively, making a total grant of \$4,900. The work performed under the two last grants was at the rate of 6 cents per cubic yard, bank measurement.

The work performed consisted in the construction of 7,566 lineal feet of embankment, with an average height of 9 feet above ground level, width at base about 30 feet, and width across top of embankment 12 feet. Yardage entailed excavating and over-casting of 62,500 cubic yards of loam, sand and clay. Owing to the striking of a bone of rock, on the construction of the easterly embankment, which reaches to a level of about 2 feet 6 inches above L.W.L., it was found necessary to have the dredge return and cut through from a point on westerly embankment, a distance of 1,500 feet, to the easterly embankment, in order to avoid the latter. It was found unnecessary to construct any embankment across the 200 feet where rock existed.

The construction of this embankment has proved of immense advantage in providing protection to the lands lying in rear, and which were, before construction of this work, suffering from the heavy seas which break upon the shore line of this island.

Total expenditure during the fiscal year, 1909-10, is \$10,285.66.

PEMBROKE.

Pembroke, in the north riding of the county of Renfrew, is on the south shore of Allumette lake, which is part of the Ottawa river. It is an important station on the Canadian Pacific railway and of the Grand Trunk, 104 miles west of Ottawa. A steamer runs daily from Pembroke to Des Joachims, a distance of 45 miles. Population, 9,000.

For details of wharf construction, see annual report, 1906-7.

An automatic bell apparatus, protecting some 1,000 feet on both sides of the Albert street railway crossing (which is part of the dock approach), was erected by the Canadian Pacific railway company, in the fall of 1908, to comply with an order of the Board of Railway Commissioners, dated July 4, 1907, and amended May 3, 1909. The cost, \$280.39, was refunded by the department, June 2, 1909. The Canadian Pacific railway is maintaining the apparatus at small cost. Bills are to be rendered periodically to the department.

PENETANGUISHENE.

Penetanguishene, Simcoe county, is a town of some 3,000 inhabitants, situated on the northwest peninsula of the Georgian Bay, formed between Nottawasago bay

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and Severn river, 40 miles northwest of Barrie. It is the terminus of a branch of the Grand Trunk railway, and a large quantity of lumber is shipped from this place annually. It contains one of the largest tanneries in the Dominion, also a number of sawmills and other industries. It is a most popular summer resort.

On June 15 last, authority was given to expend the sum of \$1,000 in repairs to the wharf by day labour.

Work was commenced September 6, and completed September 23.

The work consisted in the construction of an addition of pilework 18 by 64 feet on which it is proposed by the town to erect a small warehouse.

In doing this work some 10,689 feet B.M. pine, 609 lbs. iron and 690 lineal feet of piling were used.

Total expenditure for fiscal year, 1909-10, is \$685.20.

POINT EDWARD.

Point Edward is situated at the head of, and on the easterly side of the St. Clair river, in the county of Lambton, adjoining the town of Sarnia, and is 61 miles west of London. It is the terminus of the Grand Trunk railway. It is a port of entry and is the principal port of call for the five steamers of the Northern Navigation Company which load and unload at the spacious Grand Trunk Railway Company's freight sheds. An extensive unloading plant is in use at this place, in connection with the unloading of iron ore for the Hamilton Iron and Steel Works. The amount of ore brought from the upper lake ports during the season of 1909 was approximately 300,000 tons. The large Grand Trunk elevator handled, during the season of 1909, approximately two and a half million bushels of grain. An enormous amount of package freight is handled by the Northern Navigation Company, also a large amount of timber and coal were brought in during past season. The annual revenue has reached as high as \$200,000.

Nearly all vessels entering this port have a draught of from 17 to 21 feet.

On June 1, 1909, authority was received to commence dredging, contract for same having been re-let to the Manley Company, of Toronto, at the rate of 18 cents per cubic yard, scow measurement, for all materials other than rock, and \$1 per cubic yard, scow measurement, for rock. The expenditure was limited to \$15,000.

Operations were commenced on June 3 and continued until August 11, 1909, when work was completed.

The work performed consisted of the dredging to a depth of 22 feet below L.W.L. on different locations opposite the docks and along a frontage of 3,700 feet, also opposite the area lying between the Cleveland-Sarnia dock and the Sarnia Lumber Company's dock to a depth of 16 feet below L.W.L. The completion of this work left a minimum depth of 21 feet below L.W.L. along the entire frontage of these docks with a greater depth on an average prevailing, and which work included the removal of the middle ground between the Point Edward docks and the deep water channel on westerly side of the river. The removal of this middle ground has been practically in progress for four years, and it is anticipated that the work performed during that period will eliminate, to a very great extent, the difficulty experienced in past years, through the rapid and regular accretions forming along the frontage of these docks.

In the performance of the above work, 82,234 cubic yards, scow measurement, of sand and gravel were excavated, at a total cost, during the fiscal year 1909-10, of \$14,998.52.

PORT BRUCE.

Port Bruce is situated at the mouth of Catfish creek in the county of Elgin, on the north shore of Lake Erie and about 5 miles south of Aylmer. Population, 100. Principal industry is fishing, in the pursuance of which it ranks as an important place.

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On June 15, 1909, authority was received to expend, by day labour, the sum of \$400, in making general repairs to piers.

Work was commenced on October 14 and continued until October 30, 1909, when work was suspended owing to weather conditions; it was again resumed on December 1 and carried on, when weather permitted, until January 31, 1910, when grant was expended.

Owing to the rapidity with which the beach had made against the west pier it was found necessary to construct a timber breastwall on westerly side of said pier, 55 feet long and 5 feet high of 10-inch by 10-inch timbers to prevent sand from washing into the channel. In addition to the construction of the breast-wall, 70 feet of westerly dock in inner harbour was repaired and partially renewed.

In the execution of this work some 8,980 feet B.M. chestnut timber and 1,514 lbs. of iron were used.

Total expenditure during fiscal year 1909-10, is \$399.56.

PORT ARTHUR.

Dredging.

Dredging was resumed by the Great Lakes Dredging Company between the Canadian Pacific railway wharf and the Canadian Northern railway elevators at places not down the full depth of 22 feet below zero of gauge, also in widening the channel to King's elevator, and the channel to the Atikoken Iron and Smelting works. The following dredges were utilized:—

No. 15, commenced on April 15 and completed work on May 29, having removed 46,757 cubic yards.

No. 5, commenced on April 24 and completed work on May 15, having removed 40,603 cubic yards.

No. 8 commenced on May 12 and completed work on May 22, having removed 18,177 cubic yards.

Dominion, commenced on May 4 and completed work on May 22, having removed 68,169 cubic yards.

The total quantity removed by these four dredges was 173,506 cubic yards, at a cost of \$45,531.56, salaries of inspectors included.

The material removed was chiefly sand and clay, and the depth dredged was 22 feet in all cases.

On June 28, 1909, a contract was awarded to W. E. Phin to deepen the fish dock slip and dredge the channels to the Thunder Bay Elevator Company's dock.

Work was commenced on July 8 in the fish dock slip, and 21,637 cubic yards were removed and 1,975 yards cast. The depth dredged at outer end was 22 feet, and at the shore end, 17 and 14 feet only, sufficient to accommodate the smaller steamers. This slip is not completed, and further dredging will be done during the coming season. The material was clay, and sand with some boulders.

A channel was dredged from the south boundary of the Atikoken Smelter works southward, 180 feet in width and 900 feet in length, also in entrance channel to the Thunder Bay elevator, 180 feet in width and 1,100 feet in length; both channels were dredged to 25 feet. The material removed was clay and sand. In the channel alongside the elevator, it was necessary to do some casting, amounting to 17,350 cubic yards; this channel which is 1,400 feet in length and 140 in width, was only carried down a sufficient depth so that grain could be shipped from the elevator, which was completed last October.

Further dredging will be done there this season, as the material has washed into the channel, and from recent soundings, the average depth is only 17 feet.

The total quantity dredged by Mr. Phin is 294,770 cubic yards and 19,325 yards cast, and the expenditure, including inspector's salary, is \$40,767.82.

Work closed down for the season on November 24.

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Breakwater.

Work on the headblock was resumed on March 22; in all 13 cribs were completed and sunk into position; the first crib was placed on June 16.

The construction of the concrete superstructure was begun on July 30, and 685 lineal feet of superstructure was completed. Concrete footing blocks were laid an additional 315 feet further; 1,085 feet of concrete superstructure remains to be constructed. Total length, when completed, will be 2,770 feet.

Owing to the settlement that had taken place in the cribs placed, particularly in the last seven cribs, on account of the soft material upon which they rested, work was discontinued and closed down for the season in October.

1,800 feet of the old breakwater was removed.

The expenditure for the fiscal year ended March 31, 1910, is \$107,306.60

During the past winter, soundings were taken over the areas dredged last season.

A survey of the shore line from King's elevator to the east boundary of the city was made and soundings taken every 100 feet over the proposed location of breakwater to protect the dry dock at Bear point.

Borings were also made over the second section of the new breakwater to ascertain the nature of the foundation.

FORT WILLIAM.

Fort William, a city of 22,000 inhabitants, is situated at the west end of Lake Superior, at the mouth of the Kaministiquia river, in the district of Thunder Bay.

It is the principal lake port on the north shore of Lake Superior and the termini of two transcontinental railways.

Through this port, the terminus of lake navigation, the bulk of the grain grown in the Canadian west passes on its way to the markets of the east.

56,583,104 bushels of wheat, 15,841,511 bushels of oats, 2,354,700 bushels of barley, 3,093,627 bushels of flax and 4,165 bushels of rye were shipped by vessel between April 1 and close of navigation, while large shipments were made during the winter by the all rail route to eastern points. Heavy shipments of package freight, merchandise and coal are received during the season of navigation, and despatched westward.

Dredging operations were resumed for the season of 1909-10, on May 17, when the dredge *No. 5* commenced work. Dredge *Dominion* started work on May 22, *No. 8* on May 24, *No. 15* on June 8, *Enterprise* on June 8, and *No. 6* on June 18. These dredges have been continually at work except dredge *No. 15*, which was withdrawn on June 26, and returned on July 26.

The dredge *Frank* was added to the fleet on September 25, and the suction dredge *Enterprise*, having completed the scow trench to the Grand Trunk Pacific elevator, was withdrawn on October 30.

A change was made at the commencement of the season, whereby all dredging was carried to a depth of 25 feet instead of 22 feet.

The sections dredged over are as follows:—

*Kaministiquia River.**Black's Elevator—*

A section, 500 feet in length by 200 feet in width, was deepened in front of this elevator to allow boats to turn.

Canadian Northern Railway Dock—

One dredge cut was made along the face of this dock, removing a shoal area 500 feet in length by 30 in width.

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Grand Trunk Pacific Dock—

One dredge cut was made along the face of this dock, 300 feet in length by 30 in width.

Western Terminal Elevator Dock—

One dredge cut 300 feet in length by 30 in width, was made along the face of the dock to permit steamers to load grain.

Grand Trunk Pacific Dock to Elevator 'D'—

The full width of the river from Grand Trunk Pacific dock to elevator 'D' was dredged over and deepened to grade, 25 feet below zero, being a length of 7,000 feet on an average width of 300 feet.

Opposite McKellar River—

A section 300 feet in length by 200 in width was deepened off the entrance to the river, removing shoal areas.

Canadian Pacific Railway Coal Dock—

One dredge cut 400 feet in length and 30 feet in width was made along the face of the dock, removing shoal areas which blocked steamers getting close to dock.

Two cuts were made opposite Canadian Pacific railway hard coal shed on south side of river, removing shoal areas, said cuts being 700 feet in length by 50 feet in width.

Mission River.

The river was deepened to grade from the junction with the Kaministiquia river to the shore line of Thunder Bay, being a length of two (2) miles 600 feet, on an average width of 287 feet.

Grand Trunk Pacific Basin—

A vast amount of work was done on this section, most of the dredges being continually employed in this locality. An area of 1,420 feet in length by 442 feet in width of solid bank was removed and the section deepened to grade. The balance of Mission basin, already dredged, was deepened to grade, being a length of 1,900 feet on an average width of 788 feet.

In order to enable boats to reach the Grand Trunk Pacific elevator, it was necessary to utilize a powerful suction dredge to bore a way through the stiff clay for the dipper dredges to follow and on October 1, as promised by the Honourable the Minister a channel was ready for navigation from deep water to the Grand Trunk Pacific elevator dock; this channel is 3,100 feet in length by an average width of 144 feet.

A total of 3,399,366 cubic yards of material, of which 34,560 cubic yards were rock, were removed from the areas above between May 17 and December 11, made up as follows:—

Kaministiquia River—

| | |
|--|---------|
| Black's elevator.. . . . | 105,324 |
| Canadian Northern railway dock.. . . . | 5,944 |
| Grand Trunk Pacific dock.. . . . | 4,013 |
| Western Terminal dock.. . . . | 4,417 |
| Grand Trunk Pacific dock to elevator 'D'.. . . . | 334,534 |
| Off McKellar river.. . . . | 11,082 |
| Canadian Pacific railway coal dock.. . . . | 19,998 |

Mission River—

| | |
|-------------------------------|-----------|
| From the river proper.. . . . | 1,059,951 |
| G. T. Pacific basin.. . . . | 1,854,103 |

Total to March 31.. . . . 3,399,366

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Summary of cost—

| | |
|---------------------------------|--------------|
| Paid to contractors. | \$623,798 77 |
| “ inspectors. | 4,208 00 |
| “ justice of the peace. | 153 00 |

Total to March 31. \$628,159 77

*Mission River.**Wharfage.*

Tenders were called for and a contract was let on May 11 for the supplying of 5,323,648 feet B.M. of timber required for Mission river wharfs. Up to March 31, there had been delivered, 4,106,438 feet, and the amount paid was \$83,155.29.

Plans were exhibited and tenders were called for the construction of wharfs at the mouth of the Mission river. On September 7, a contract was awarded for the construction of some 4,906 lineal feet of cribwork, with concrete top, at the mouth of the river.

Work was commenced on August 26, and is still in progress. So far, twenty-two cribs are completed up to nineteen (19) courses and work is under way building up the balance of these cribs. As soon as the necessary dredging of crib seats is done, these cribs will be sunk in position.

The expenditure, on wharfage, for the fiscal year ended March 31, 1910, is \$75,991.04.

Generally.

Work was carried on by the staff in marking, with iron posts, the turning points of all parcels of land expropriated for river widening.

During the winter, a complete survey of the harbour was made, and 22,000 soundings were recorded and plotted; work commenced on December 13 and completed on March 19.

PORT BURWELL.

Port Burwell is situated on the north shore of Lake Erie, in the southeasterly portion of the county of Elgin, being 51 miles, almost directly north, across the lake from Ashtabula and 16 miles south from Tillsonburg, where there are four railways for distributional purposes, viz.: the Canadian Pacific, the Grand Trunk, the Michigan Central and the Wabash. The population is about 500; the principal local industry being commercial fishing. There are four steam tugs, two naphtha launches and three sail boats engaged in the business, with their compliment of crews, packers and associated trades. The principal object in keeping the harbour dredged and in repair is on account of the coal trade, which produces a large revenue. Apart from the necessary shipping connected with this coal trade, there is very little other business done in the harbour, except the fishing.

The report of the Department of Customs for the year ended March 31, 1909, states ‘The customs revenue collected, including Ingersoll, Tillsonburg and Port Burwell, the latter being really the port of entry, was \$160,908.16.’

The shipping apart from the coal ferry was as follows:—‘To enter port, 13 Canadian steam vessels of 404 combined tonnage with crews numbering 79 men; 3 United States steam and 1 sailing vessels of 592 combined tonnage with 32 men. Those leaving port consisted of 14 Canadian steam vessels of 489 tons and 86 men, 4 United States steam and 1 sailing vessels of 866 tons and 41 men.’

The probabilities are that the revenue, from the coal trade, will not be as large this year as it was last, since the coal ferry ceased to run during December last.

On Sunday, December 12, the coal ferry *Ashtabula* ran aground while trying to enter, at a point about 600 feet out in the lake, and with the exception of being

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shifted around by the seas and winds, she remained there until December 24, by which time she was brought into port by the Reid Wrecking Company, of Sarnia.

During the season, extensive dredging was done, made necessary on account of the entrance channel being completely filled with drifting sand which was swept in during fall and spring storms, and the inner harbour being filled to a greater extent than usual by the excessively heavy spring freshet which washed down the silty formation of the bed of Otter creek and settled in the wider expanse of the turning basin where the river current was modified. Three dredges worked during the summer season of 1909: the contract dredge *Edmund Hall* and the two departmental dredges *Quebec* and *Industry*. The *Edmund Hall* worked from October 1 to November 2, and removed 16,065 cubic yards of silty sand from the north end of the harbour and a shoal which was not completely moved by the *Industry* in the turning basin; from November 5 to 13, worked in the entrance channel, removing 2,647 cubic yards; the cuts are 30 feet wide and to a depth of 21 feet. The *Quebec* worked from April 27 to July 17, and the *Industry* from July 27 to October 6, in the inner harbour and out in the lake channel to a depth of 23 feet in the former and 25 feet in the latter.

It is practically impossible to keep the channel open until a structure be placed at the westward side to prevent sand drift; where the channel was dredged, last summer, to a depth of 25 feet, there is now only 12½ feet. The dredged areas overlapped and the same points were dredged as much as three times. Dredging to a depth of 25 feet, clay was removed to a limited quantity in the lake, the average depth down to clay being about 23 feet.

Repairs to Piers and Docks.

The whole of the superstructure, with the exception of the work built in 1906-7, as a retaining wall for the turning basin, are in a badly decayed condition and are easily damaged; their removal should be commenced at an early date, when the superstructure might be renewed with concrete, the work to be performed by day labour. During the past fiscal year, repairs were made to damage done by coal ferry *Ashtabula*, by the action of the seas and by the dredging plant. The piers were also strengthened in several places, at salient corners, by placing upright sheeting and iron straps on the outside, with stay posts and extra stone filling on the inside of the timber work.

The expenditure for the fiscal year ended March 31, 1910, is \$21,892.02.

PORT COLBORNE.

Port Colborne, Welland county, is situated on the north shore of Lake Erie, about 20 miles west of the city of Buffalo, N.Y.; it is the terminus, on Lake Erie, of the Welland canal, and as such is of great importance in connection with grain transportation and other freight from the west to the St. Lawrence ports.

On October 1 last, authority was given to expend the sum of \$400 in making temporary repairs to the headblock of the east breakwater which had been severely damaged by the Str. *Glenellah* having collided with it on August 1 last.

The work was performed by Mr. M. J. Hogan and consisting of grouting the rents and cementing together the large fragmentary portions of the injured structure as well as making some renewals to the outer face of breakwater.

In doing this work, some 28 bags cement, 6 cubic yards of sand, 6 cubic yards stone, 400 pounds iron and 720 feet B.M. pine were used.

Work was carried on October 23 to November 1.

Total expenditure for fiscal year 1909-10 is \$139.70.

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PORT FINDLAY.

Port Findlay, district of Algoma, is situated on the north shore of Lake Huron about 5 miles below the entrance of St. Mary's river and 30 miles from Sault Ste. Marie.

On June 15 last, authority was given to expend the sum of \$1,150 in repairs to the wharf by day labour.

Work was carried on from August 1 to 14, and consisted in levelling up and replanking wharf and renewing foundations under warehouse. The warehouse is 30 by 20 feet and the timber portion of wharf 37 by 137 feet with a stone approach 20 by 190 feet in length.

In doing this work, some 10,432 feet B.M. hemlock, 226 lineal feet hemlock, 864 feet B.M. oak, 14,200 feet B.M. tamarac, 266 lineal feet pine, and 239 bolts were used.

Some repairs were also made to the stone approach and in doing this work some 31 cubic yards of stone filling and 6 cubic yards of gravel were used.

Total expenditure for fiscal year, 1909-10, is \$1,147.89.

PORT HOPE.

Port Hope, Durham county, is situated on the north shore of Lake Ontario, 63 miles east of Toronto, on the Grand Trunk railway. The chief trade is in lumber and grain. It has a number of important industries. Population, 5,000.

On June 2 last, authority was given to expend the sum of \$6,160 in dredging, the work to be performed by Mr. W. E. Plin, at the following prices per cubic yard, scow measurement: rock, \$2.40; other materials, 22 cents.

Work was commenced June 5 and completed June 26.

The work consisted in dredging at the entrance to the piers to a depth of 12 feet and a width of 125 feet and a length of 175 feet, also two shoal spots, one about 50 by 50 feet and the other about 170 feet and an average width of 25 feet, all to a depth of 12 feet.

In doing this work some 26,716 cubic yards of other materials were removed.

On June 15 last, authority was given to expend the sum of \$3,400 in repairs to the piers by day labour.

Work was commenced September 7 and carried on till December 21 and then from March 15 to 31.

The work consisted in the placing of large stone along the east side of the east pier for a length of 395 feet and a width of 15 feet also along the lake shore for a distance of 50 by 12 feet in width, and the renewal of 175 feet of the decayed portion of the east pier on the east side of the harbour in concrete, and renewing the decking, where necessary.

In doing this work some 12,831 feet B.M. pine, 8,000 feet B.M. hemlock, 200 lbs. iron, 53½ cubic yards of concrete blocks complete, 80 cubic yards stone and 575½ tons stone were used.

Total expenditure for fiscal year, 1909-10, is \$9,340.95.

PORT ROWAN.

Port Rowan, Norfolk county, is situated on the north shore of Lake Erie, in the inner bay of Long Point, and is 21 miles from the town of Simcoe. Population, about 1,000. It is a favourite summer resort and a considerable quantity of fish is shipped over the dock.

On June 15, 1909, authority was received to expend, by day labour, the sum of \$500 in performing necessary repairs required to pier.

Work was performed between July 5 and 31, and consisted in the removal and renewal of face timbers where required; the renewal of a continuous length of 125

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feet of decking of pier with 3-inch pine and chestnut; the repairing and renewal of other portions of decking of pier; five cords of stone were placed along east face of approach, and the wall along the west face renewed. All new timbers were given two coats of carbolineum avenarius. The completion of this work left the pier in good condition.

Total expenditure during the fiscal year, 1909-10, is \$499.27

PORT STANLEY.

Port Stanley is an important harbour of refuge, situated on the north shore of Lake Erie, at the mouth of Kettle Creek, in the county of Elgin, $8\frac{1}{2}$ miles by rail south of the city of St. Thomas, and $23\frac{1}{2}$ miles south of the city of London. It is the termini of the Père Marquette railway and of the Southwestern Traction Company Electric railway. It is a favourite summer resort. Population about 750 inhabitants, which is largely increased during the summer months.

A large coal ferry, owned by the Lake Erie Coal Company, of Walkerville, Ontario, and carrying 30 cars, each of a capacity of 100,000 lbs., plies between this port and Conneaut, Ohio, making, on an average, two round trips every 30 hours. During the season of 1909, some 35,000 tons of steel, 9,000 tons miscellaneous and 389,000 tons of coal were brought into this port by this car ferry. It is a port of entry and the revenue collected during the past fiscal year amounted to \$82,219.67. It is the most important fishing point on Lake Erie, some 10 tugs and 5 sailing boats being engaged in this work. During the season of 1909, fish, approximating in value of \$100,000, were caught and shipped while an additional large amount of fish were shipped by fishermen located at Port Bruce, and adjoining points.

It is a regular port of call for two lines of steamers carrying passengers and considerable package freight. There is a small grain elevator which, during past season, handled about 100,000 bushels. The maximum draught of vessels entering the port is about 17 feet.

In addition to the materials already mentioned, the imports also consist of timber, ties, fence posts and general merchandise. Trade at this point is steadily increasing.

At the last session of parliament, the sum of \$7,100 was voted for the construction of six groynes on the easterly side of this harbour.

On February 1, 1909, a contract was awarded to Mr. John H. Smale, of Port Burwell, Ontario, for the construction of these groynes, for the sum of \$6,535.

Work was in progress at the beginning of the fiscal year and was completed on December 31, 1909, and consisted in the construction of 6 groynes, each built of a close-faced crib, 60 feet long, 10 feet wide and 6 feet high, of 12-inch by 12-inch timbers, resting on clay bottom and filled with stone ballast; from the inner end of 5 of the groynes to the high bank in rear, an average distance of 18 feet, a line of 3-inch sheet piling was driven to refusal in clay. A 4-inch by 10-inch waling is spiked along the outer top edges; each line of sheeting is backed with stone filling 3 feet wide, reaching from the clay to the top of the sheeting. The area within the stone fillings is filled with coarse gravel. 1-inch tie rods tie the two rows of sheeting together at three points. The length of the shore, thus protected, is approximately 4,400 feet and the protection to this shore line derived from the construction of these groynes has been very marked, practically no erosion having occurred to the bank since the groynes were constructed, and the beach, adjoining most of the groynes, having made as much as 40 feet at one point.

An additional groyne was built in this location some two years ago by Mr. W. K. Cameron, of St. Thomas, Ontario, and was paid for by the government; cost, \$450. This groyne was built of a close-faced crib 80 feet long, 8 feet wide and averaging 6 feet high and filled with stone ballast.

The total expenditure during the fiscal year, 1909-10, is \$7,636.86.

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Repairs to Piers, &c.

At the last session of parliament, the sum of \$38,000 was voted for harbour improvements. On March 1, 1909, verbal authority was given to expend the sum of \$900 by day labour, to complete the renewal of a portion of westerly pier, and which work was then in progress, it being understood that the payment for materials and labour would be made as soon as the expenditure of the grant voted was authorized.

On June 3, 1909, authority was given to proceed by day labour, with repairs and renewals required to works in the harbour, expenditure to be limited to \$14,000.

Work was in progress at the beginning of the fiscal year and was continued throughout the fiscal year, and consisted of the removal of 84½ lineal feet of westerly pier, and the renewal with substructure, consisting of oak piles 28 feet long, driven 5 feet centres with intermediate tamarack or oak piles of same length; these piles were cut off about 5 inches below L.W.L. and fastened by screw bolts to an inner and outer 6-inch by 10-inch white oak waling. The piles were then tied back by 1½-inch round iron tie rods to anchor piles securely driven 21 feet in rear of the piling and at intervals of 10 feet. The front wall of the new structure rests on the former row of piles. The foundation for the rear wall of the structure, which is 16 feet wide, consists of six posts driven at 5 feet centres and cut off below L.W.L. The superstructure consists of reinforced concrete walls 12-inches thick and built to a height of 5 feet 10 inches above L.W.L., with reinforced concrete 12-inch by 8-inch cross-ties; the whole filled with stone ballast and a granolithic floor 6 inches thick laid over the surface of the dock. This work presents an excellent appearance and is to be extended during the coming season.

Additional work to this pier was as follows:—

Outer 150 feet of pier was removed by government dredge *Industry* after superstructure of same had been stripped by day labour. Four clusters of spring piles were driven on the west side of and towards the outer end of this pier; 30 feet of the extreme outer end of pier was rebuilt from below water level up and anchored back with 1½-inch iron tie rods, stone ballast and decking replaced. Three reinforced concrete snubbing posts were erected while three old snubbing posts were reset; 1,900 feet of decking of docks was repaired, using 11 M. feet B.M. of timber; and the government warehouse was also repaired.

Work performed on easterly pier was as follows:—

Outer end of pier repaired and partially renewed from 2 feet below water level up; 90 lineal feet of inner end of pier which was badly decayed was stripped and rebuilt from water level up; face timbers and cross-ties of 12-inch by 12-inch hemlock, and covering with 3-inch pine planking laid on suitable joists. Other minor repairs made, including renewal of a small amount of stone filling. In addition, seven cords of stone rip-rap was placed along the toe of the breastwork on west side of approach to east pier, other minor repairs were performed including the stripping of the greater portion of 150 feet of west pier in preparation for the renewal of same.

In the performance of the above work, some 55,215 feet B.M. yellow pine and hemlock, 700 feet B.M. of white oak, 3,876 lineal feet of white oak timber, 13,345 lbs. of iron, 352 bbls. of cement, 288 tons of stone and 28 cords of gravel were used.

All new timber was treated with two coats of carbolineum avenarius.

Sheet-pile Protection Work.

On July 2, 1909, authority was given to expend a sum not to exceed \$5,000, in the construction of close-pile protection work, of approximately 250 feet of inner face of westerly pier, and an arrangement was made with Mr. Roy Miller, of Port Stanley, Ont., for the performance of the work, at the rate of \$18.75 per running foot. Such price included the providing and driving on inner face of westerly pier of close-sheeting of long leafed yellow pine 28 feet long and 8 inches thick, with two outer

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8-inch by 10-inch yellow pine walings securely fastened to piling with screw and drift bolts, and the whole tied back securely with double 1-inch round iron tie rods to anchor piles of white oak, 20 feet long driven in rear of sheet piling, and at intervals of 10 feet. The sheet-piling was cut off level with the original height of pier and the decking was re-levelled to this height and left in first-class condition. In re-levelling this pier, wherever decking taken up was found to be unsound, new material was substituted by the contractor. 216½ running feet of this piling was actually constructed and the decking in rear of same re-levelled and partially renewed, while one extra anchor pile was supplied and driven and 61 additional feet of pier was re-levelled and flooring of same renewed by the party who constructed the sheet-piling.

Breakwater.

At the beginning of the fiscal year, the breakwater was not completed, under the contract which was awarded to Messrs. Hancy & Miller, of Toronto.

Operations for the season were resumed on April 21, 1909, and the whole work was finished on July 14 following. Between these dates, the work performed consisted particularly of the placing of a few iron plates on the outer face of breakwater. This structure presents a solid and good appearance, and has already proved itself impervious to heavy gales which so frequently occur on this lake.

Dredging.

Between October 4 and 8 last, the government dredge *Ontario* was employed in dredging at entrance to the car ferry slip, also in inner harbour, and from October 14 until November 30, 1909, the government dredge *Industry* was employed in excavating in inner harbour, to a depth of 19 feet below L.W.L., the widening and deepening of outer entrance to harbour of an area approximately 925 feet long and 115 feet wide, to a depth of 21 feet below L.W.L., as also in the removal of 150 feet of outer end of westerly pier. The stone removed from this latter work was utilized as rip-rap along the outer face of breakwater, and where erosion was found to have occurred. On March 23, 1910, the government dredge *Industry* resumed operations at northerly end of inner harbour, dredging to a depth of 16 feet below L.W.L. and was still at work at the end of the fiscal year. A small portion of the material excavated was dumped along inner and outer faces of breakwater for protection to same. 82,236 cubic yards of clay and sand were removed.

The total expenditure on 'harbour improvements' (excepting dredging) during the fiscal year 1909-10, is as follows:—

| | |
|--|-------------|
| Repairs to piers, &c. | \$ 8,956 52 |
| Construction of close sheet-piling of westerly pier, &c. | 4,267 02 |
| Breakwater. | 18,254 00 |
| | <hr/> |
| | \$31,477 54 |

PORTSMOUTH.

The breakwater pier was repaired by replacing parts of the planking, stringers and wales.

The work was done by day labour at a cost of \$538.84.

PROVIDENCE BAY.

Providence Bay, district of Algoma, is situated on the south shore of Manitoulin island, Lake Huron, about 12 miles northwest of Michael's bay, 30 miles by road from Manitowaning and 25 miles from Gore bay. Population, 300.

It has a large saw-mill and is a fishing station of considerable importance and is one of the principal ports on the island at which all local steamers call.

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On July 12 last, authority was given to expend the sum of \$200 in repairs to the stone approach to the wharf by day labour, also on June 7 last, authority was given to expend the sum of \$300 in the construction of a warehouse on the government wharf by day labour.

The work on the approach was commenced August 23 and completed September 30 and consisted in repairing the stone approach for a length of 80 feet.

The work on the warehouse was commenced October 25 and completed November 30, and consists in the construction of a warehouse 11 feet 8 inches by 52 feet.

In doing the above works, the stone for the approach was secured without cost and for the warehouse some 5,000 ft. B.M. hemlock, 182 lbs. iron, 7,000 shingles and 6 squares of metallic sheeting were used.

Total expenditure for fiscal year, 1909-10, is \$467.17.

RAINY RIVER.

Rainy river, in the district of Rainy river, runs from Rainy lake to Lake of the Woods, a distance of some 30 miles, and forms the boundary line between Ontario and Minnesota. The river has an average depth of some 18 feet, but shoal water obstructs the outlets, of which there are two, one past Oak point, which was the main channel, and the other, back of the sand hills, Sable island, near Burton island.

Lumbering is the principal industry of this section, and logging operations are carried on between Rainy river and Kenora on Lake of the Woods.

Authority was given to proceed with dredging in this locality, removing shoal areas which obstructed entry to towing channel, to a depth of 10 feet below low water level. Operations were commenced, back of the sand hills, near Burton island, on July 26, when the dredge *Moose*, of the Rainy River Dredging company, started work.

Operations were carried on until October 16, and consisted in the removal of three cuts 2,400 feet in length, and 57,134 cubic yards of sand and clay were removed, giving a channel depth of 10 feet below low water level. Work closed down for the season on October 16.

During the winter, a survey of the towing channel, back of the sand hills, was made, commencing on January 11, and was completed on March 26. Soundings were recorded over a width of 600 feet and on a length of 34,720 feet, being from Burton island to connect with survey made last year; some 10,000 soundings were taken and plotted.

The expenditure for the fiscal year ended March 31, 1910, is \$16,947.10.

RICHARD'S LANDING.

Richard's Landing, district of Algoma, is a small village on the north shore of St. Joseph's island, Georgian Bay, distant 9 miles by water from Desbarats, the nearest railway station. Population, 350.

At the last session of parliament, the sum of \$1,700 was appropriated for repairs to the wharf, and on May 27 last, authority was given to proceed with the work by day labour.

Work was commenced July 13, and completed November 18.

The work consisted in the construction of an addition to the west end of the old wharf 62 by 35 feet of cribwork and spaces composed of 4 cribs 12 by 20 feet, two of which are 14 feet in height and two 16 feet in height. The cribs and spaces have been covered with decking.

In doing the above work, some 7,200 feet B.M. hemlock, 3,960 feet B.M. balsam, tamarac, pine and hemlock, and 100 lbs. iron were used.

Total expenditure for fiscal year, 1909-10, is \$1,700.60.

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RIVER ST. LAWRENCE.

Canadian Channel.

The work of improving the Canadian or middle channel of the St. Lawrence in the vicinity of the Fiddler's Elbow, between Brockville and Gananoque, was continued during the past fiscal year. Blasting and removing rock, to a depth of 16 feet, was carried on from April 1 to December 21, when work was shut down for the winter, and renewed in March, 1910. The quantity of rock to be removed is 29,400 cubic yards, 23,000 yards of which is at the Elbow. The work is being done under contract at the rate of \$3.95 a yard, in place. To date, 2,300 cubic yards have been removed, and 1,500 lineal feet of drilling, over an area of 3,750 square feet, have been blown but not yet removed.

ROCHE'S POINT.

Roché's Point, York county, is a small summer resort on the west shore of Cook's bay, an arm of Lake Simcoe.

On March 20 last, authority was given to expend the sum of \$150 in making repairs to the wharf by day labour.

Work was commenced June 24, and completed July 3, and consisted in repairing the stone approach and placing heavy stones along the westerly or most exposed face. In doing the above work, some 20 cubic yards of stone were used.

Total expenditure for fiscal year, 1909-10, is \$146.42.

RONDEAU.

Rondeau, Kent county, is an important harbour of refuge, and port of entry, situated on Pointe Aux Pins, about 19 miles south of the city of Chatham and 45 miles west of Port Stanley. It is a favourite summer resort and the terminus of the Sarnia and Rondeau branch of the Pere Marquette railway. Population, about 100.

In the inner harbour and at westerly side along coal dock, a modern and extensive coal handling plant is used by the Lake Erie Coal company for unloading coal from their boat which runs regularly between this point and Conneaut, Ohio. During the past season, 165,000 tons of coal was brought in by this company, and on the greater portion of which a duty of 53 cents per ton is collected.

It is a port of call, during the summer season, for the passenger steamer running to Cleveland. Fishing tugs work from this point.

At the last session of parliament, the sum of \$25,000 was voted for harbour improvements, and on March 26, 1909, a contract was signed by Mr. Wm. Bermingham, of Kingston, for the sum of \$229,000 for the construction of 1,000 feet of break-water pier, consisting of close-faced timber cribwork substructure, filled with stone ballast, and mass concrete superstructure.

Active operations were commenced on February 22, and were in progress at the beginning of the fiscal year and continued throughout the season until November 3, 1909, when work closed down for the winter. During that time, all of the stone and iron required for the work and the greater portion of the timber were secured and piled on the site of the work. All necessary arrangements are being made by the contractor to push the construction of this work during next season; it being anticipated by the end of next season all of the substructure will be built and be thus given the winter of 1910-11 to settle.

Dredging.

On June 1, 1909, authority was received to proceed with dredging at this point, expenditure to be limited to the sum of \$5,940, and work to be performed by the Cape Breton Dredging company, of Toronto, at the price of 33 cents per cubic yard, scow

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measurement, for all materials except boulders. This grant was supplemented by an additional grant of \$5,800 on July 8 last. Active operations commenced on June 3, and ceased on July 28, during which period 35,000 cubic yards of clay, sand and gravel were excavated.

The work performed consisted of the dredging of a channel at outer entrance to piers 150 feet wide, with an average length of 400 feet, and to a depth of 21 feet below L.W.L., also the partial dredging of a turning basin in inner harbour to a depth of 20 feet below L.W.L.

Repairs to Piers.

On May 26, 1909, authority was received to expend by day labour the sum of \$350, and which amount was subsequently increased by an additional \$275 on November 18, to perform urgent repairs required to piers.

Operations were commenced on June 3 and were carried on intermittently throughout the fiscal year.

Work done consisted of the repairing of a length of 38 feet of outer end of easterly pier; the repairing of a length of 305 feet of timber breastwork on easterly and lake side of east pier, repairing and sheet-piling, four mooring posts, cable and spring piles, and the removal and renewal of decayed face timbers of westerly pier. In addition, further repairs were again made to the outer end of easterly pier which was damaged a second time during latter part of season 1909. General repairs to the decking of both piers were likewise performed.

In the performance of the above work, some 2,266 feet B.M. of pine, oak, and fir timber, 678 lbs. of iron and 1½ cords of stone were used.

The total expenditure during the fiscal year 1909-10, is:—

| | |
|--------------------------|-------------------|
| Breakwater.. . . . | \$23,806 29 |
| Dredging.. . . . | 11,732 49 |
| Repairs to piers.. . . . | 625 00 |
| Total.. . . . | <hr/> \$36,163 78 |

ROSSEAU.

Rosseau, district of Muskoka, is a popular summer resort at the northerly end of Lake Rosseau. It is largely patronized by tourists.

On July 8 last, the sum of \$533 was authorized to be expended in making repairs to the wharf by day labour.

The work was carried on from September 20 to November 24, and consisted in re-planking the northerly pier for a length of 120 feet of which 80 feet is 18 feet in width and the remainder has an average width of 30 feet. The crib at the outer end of the north pier was moved back into place and entirely filled with stone, also a hollow spot at rear of warehouse was filled.

In doing this work, some 12,197 ft. B.M. pine, 370 lbs. iron, 16½ cords of stone and 5 loads of earth were used.

Total expenditure for fiscal year, 1909-10, is \$464.92.

ROSSPORT.

Rosspport, Thunder Bay district, is a village of 200 inhabitants on the main line of the Canadian Pacific railway, 14 miles west of Schreiber, on the north shore of Lake Superior. It has a fine natural harbour. The chief industry is fishing.

On July 20 last, authority was given to expend the sum of \$250 in the construction of a warehouse on the government wharf by day labour.

Work was commenced September 16 and completed September 23, and consisted in the construction of a building 16 by 20 feet.

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In doing the above work, some 2,658 ft. B.M. pine, 65 lbs. iron and 14 squares of metallic siding were used.

Total expenditure during fiscal year, 1909-10, is \$153.80.

SAUGEEN RIVER.

Saugeen river empties into Lake Huron, at a point about 32 miles from Walkerton, and about 43 miles from Sarnia. At the mouth of the river is situated the thriving town of Southampton. The harbour situated at the mouth of this river is utilized by a large number of deep draught fishing tugs; it is also an important harbour of refuge. Maximum draught of vessels about 10 feet. A very large amount of fish are shipped annually from this point.

On June 15, 1909, authority was received to expend by day labour, the sum of \$500 in making repairs to piers at the mouth of the Saugeen river.

Work was commenced on July 5, and was practically completed on October 30, 1909, and consisted of the renewal of broken planks on the deck of north pier as also deck capping; the renewal of a few face timbers and of a large quantity of gravel and stone filling which had been washed out at inner end of north pier, where erosion had occurred; a breastwork of 3-inch hemlock sheeting, 8 feet long, was run from the inner end and on river face of pier into the adjoining bank to the eastward to avoid possibility of river breaking through at this point during freshet season. This sheeting was well backed with heavy boulders. A few places on south pier where signs of erosion were evident were filled in with brush, gravel and stone.

Departmental scow was repaired with pine, caulked and painted in March, 1910. The work done left these piers in good condition. Some 4,815 feet B.M. of timber, 716 lbs. of iron and 120 loads of stone were used in the performance of the above work.

Total expenditure during fiscal year, 1909-10, is \$498.54.

SAULT STE. MARIE.

Sault Ste. Marie, district of Algoma, is situated at the head of St. Mary's river, which connects Lake Superior with Lake Huron. Population, 10,500. It is on the main commercial route from the Great West to the seaboard. The tonnage passing through the 'Soo' canals during 1908 amounted to some 9,594,941 through the Canadian lock and 21,487,499 through the American locks.

On April 29 last, authority was given to expend the sum of \$150 in repairs to the wharf and warehouse by day labour, and same was commenced about the middle of May and carried on at intervals until November 19 and consisted in repairing the decking of the old wharf and papering and painting office and waiting-room, also repairing the plumbing and providing some new lights.

In doing this work, some 2,000 feet B.M. hemlock plank, and 22 loads of gravel were used.

At the last session of parliament, the sum of \$55,000 was appropriated for dredging, and on April 17 last, authority was given to proceed with the work, which was to be performed by Mr. A. F. Bowman at the following prices per cubic yard, scow measurement: Rock, \$3.15; boulders, \$1.50; other materials, 57 cents.

This work commenced April 17 and closed for the season on November 9.

The work consisted in the construction of a channel 200 feet in width extending from the government wharf westerly until it intersects the ship channel to the canal on the Canadian side, also the removal of a number of shoal spots in the approach to the government wharf from the east.

During the season some 20,252 cubic yards of rock, 1,064 cubic yards boulders and 2,250 cubic yards of other materials were removed.

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Total expenditure for fiscal year, 1909-10, is:—

| | |
|------------------|-------------|
| Repairs.. . . . | \$ 163 47 |
| Dredging.. . . . | 71,505 91 |
| | <hr/> |
| | \$71,669 38 |

SEVERN RIVER.

Severn river, Ontario county, flows from the northerly extremity of Lake Couchiching to the Georgian bay.

There are two stop-log dams on the river at Washago, one of which required four new stop-logs which were duly provided.

Total expenditure for fiscal year, 1909-10, is \$39.98.

SHEGUINDAH.

Sheguindah, district of Algoma, is situated on the north shore of Manitoulin island at the entrance to Haywood Sound and at the west end of Sheguindah bay. The village is 6 miles south of Little Current and 16 miles north of Manitowaning.

On June 15 last, authority was given to expend the sum of \$500 in repairs to the wharf by day labour.

Work was commenced September 10 and completed October 20, and consisted in filling in 78 feet with stone and raising the approach some 2 feet and renewing the decking where required.

In doing the above work, some 1,400 feet B.M. pine and 36 pounds iron were used. The stone used was secured free of charge.

Total expenditure for fiscal year, 1909-10, is \$500.29.

SILVER CENTRE.

Silver Centre, district of Nipissing, is on the west shore of Lake Timiskaming, 22 miles south of Haileybury. At this point a heavy traffic has been developed on account of the establishment of mines in the vicinity.

The landing head, on which construction was carried on September 15 to November 31, 1908, with the \$4,000, voted in session of 1908, was resumed March 16, 1909, and completed April 16, 1909, before the ice broke up. It stood the ice shove remarkably well, considering that it is some 400 feet from shore, exposed to green ice fields moving with considerable wind fetch.

The expenditure (April 1-16) was \$173.50.

During the period of extraordinary high water, the wharf was submerged (May 24-June 13). The danger light maintained cost \$5.25.

Work was resumed August 3, and discontinued October 21. Outlay was \$4,167.38 for the construction of freight shed; pile-work and rip-rap approach 345 feet long, 18 feet wide, and two pile-work ice-breakers 18 by 20 feet.

Owing to the stage of water surface, some bracing and the ice aprons were not placed till February 18-28, 1910, when the material already on hand was used. Iron plate was also placed on S.E. corner of landing head. Outlay for 1910, \$290.94.

From the time work was discontinued in the fall, till the close of navigation, namely October 22-December 17, 1909, a danger light was maintained at a cost of \$5.70. The work was carried out by day labour.

Total expenditure, 1908-9-10, \$9,125.41, which may be summarized as follows:—

| | |
|--|------------|
| Landing head with freight shed and ice-breaker.. . . . | \$5,000 00 |
| Approach with two ice-breakers.. . . . | 4,125 41 |

SOUTHAMPTON.

Southampton is a prosperous town situated at the mouth of the Saugeen river, in the county of Bruce, and on the easterly shore of Lake Huron, 32 miles from

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Walkerton, the county town; it is the terminus of the Grand Trunk railway, a harbour of refuge, and a port of call for steamers of the Algoma Steamship line. Population, about 2,000. It is a favourite summer resort. During the season of 1908, some 207 schooners, steam and tow barges entered this port; total tonnage of same being 24,889 tons, and the cargoes handled were composed of principally lumber, shingles, laths and ties. Maximum draught of vessels, about 16 feet.

At the last session of parliament, the sum of \$6,000 was voted for the extension of and repairs to the town dock, and on May 27 last, authority was received to expend the grant by day labour.

Operations were commenced on June 10 and were continued until the end of the fiscal year.

Work performed, consisted in the stripping of 607 lineal feet of the north side of the inner end of dock, to a depth of one foot below L.W.L. where sound timber was reached. A grillage was built on this latter timber and then a concrete retaining wall four feet wide at the base, three feet wide at the top and with an average height of 6 feet 6 inches was constructed. The wall was built in 12-foot lengths of alternate blocks, the intermediate blocks being afterwards filled in. Proportions of material used in concrete were one of cement to six of gravel and sand to a height of 6 inches above water level, and one of cement to eight of gravel and sand from 6 inches above W.L. to the surface of the wall. Bolts of 1 inch round iron extended from the grillage up into the concrete, at each intersection of cross-tie and face and longitudinal timber. An 8-inch by 10-inch timber waling was constructed on the face of the wall, along the outer 300 feet of its length; the wall was then backed with heavy stone filling and levelled off with gravel.

The railway track, which extends along this dock, was then thrown to the north side of the structure and 280 feet of the inner end of the south side of dock was then stripped to 1 foot below L.W.L., preparatory to starting construction of concrete wall similar to that built on north side.

There is a considerable amount of cement, gravel, &c., on hand which will be utilized in the finishing of the work. The completion of this work will leave an excellent permanent dock with a total length of 1,107 feet.

In the execution of the above work some 29,916 feet B.M. of pine, hemlock and hardwood timber, 4,830 lbs. of iron, and 549½ bbls. of cement were used.

Chantry Island Breakwaters.

On May 12, 1909, authority was received to expend by day labour the sum of \$150 in making repairs required to breakwater piers, and which sum was on September 18 following, increased by \$200.

Work was commenced on May 17, and ceased on June 8 following; it was again resumed on October 1 and completed on October 25, 1909, and consisted of renewing of 5,400 square feet of the decking of breakwaters, the renewal of 40 lineal feet of face timbers at water edge on south face of easterly breakwater, renewing of two cords of stone filling and two snubbing posts, together with other minor repairs.

Owing to the extent of these breakwaters, and their age, the question of maintaining the work, without a large expenditure, is a difficult one, while the importance of the breakwaters as a protection to the town dock, located to the south, is such that it is absolutely necessary to keep these breakwaters intact.

In performing the above work, some 8,048 feet B.M. of hemlock and hardwood timber and 715 lbs. of iron were used.

Total expenditure during the fiscal year 1909-10, is as follows:—

| | |
|--------------------------|------------|
| Town dock | \$5,999 03 |
| Chantry Island | 349 95 |
| Total | \$6,348 98 |

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SOUTH NATION RIVER.

The South Nation river has an irregular course of 100 miles, and flows into the Ottawa river at Wendover, Prescott county. This river with its large water shed, running as it does through flat country, overflows its banks extensively during the spring and summer freshets. In 1900-2, one of the obstructions, the 'pitch-off,' was lowered. In March, 1908, Hagar's dam, at Plantaganet village, was purchased and removed. August 18-October 2, 1908, the shoal opposite the cemetery was lowered, August 26-November 27, 1908, the first cut at the 'pitch-off' was put through. Continuing to March 8, 1909, the second cut was blasted for about half its length.

This improvement was continued during the last fiscal year, when from July 14 to August 31, 1909, the second cut was completed, and the first cut further improved, at a cost of \$2,021.79, by day labour.

The work in the second cut consisted in removing 1,324 yards (in situ) solid rock, thus making a second channel, varying from 65 feet to 85 feet in width, 390 feet long, and an average of 2 feet deep. The whole work to date, first and second cuts, provides a clear channel through half the obstruction.

The immediate effect when the cofferdam was taken out, was to lower the Plantaganet-Casselman reach some 2 feet. The increased section will prove of great benefit to the flood drainage of the water shed.

The plant, coal, &c., used intermittently on this work is stored on private property, at the nominal cost of \$1 per month.

Expenditure for fiscal year ended March 31, 1910, is \$2,055.61.

SYDENHAM AND CHENAL ECARTE RIVERS.

Sydenham river has its outlet in the Chenal Ecarte river, the passage between St. Anne island and the mainland. From its mouth to Wallaceburg is a large navigable stream, above this point it divides into two branches; north to Wilkesport 14 miles, and east to Dresden 15 miles.

Chenal Ecarte takes its rise in the River St. Clair and flows in a tortuous route in a southeasterly direction to within a short distance of Wallaceburg, where it joins the Sydenham river, then flows in a southerly direction into Lake St. Clair. With the exception of a few locations, the river is sufficiently wide and deep to permit canal sized boats, with a draught of 18 feet, to proceed from St. Clair river to the town of Wallaceburg. During the season of 1908, 193 vessels utilized this route; the number of vessels utilizing it during the past season was slightly in excess to that of 1908, maximum draught of same being 16 feet. It is used particularly for the importation of beets and raw sugar to the beet sugar factory at Wallaceburg, also for coal, wood, building materials, &c. The imports are rapidly increasing and figure as an important item in the large customs revenue collected at Wallaceburg.

By the improvement of the Chenal Ecarte river between Wallaceburg and the St. Clair river, it is anticipated that not only the quantity of material imported will be largely increased, but that a trade direct with the west over this route, will be established.

On September 16, 1909, authority was received to expend an amount of \$2,500 in the improvement of the Sydenham river, dredging to be performed by the Manley Company, of Toronto, at the rate of 23 cents per cubic yard, scow measurement.

Work was performed between September 30 and October 7, 1909, and consisted in the removal of a small knoll close to the town of Wallaceburg, the widening of channel of river for a length of 550 feet in the vicinity of the junction of the Sydenham and Chenal Ecarte rivers, to a depth of 19 feet below ordinary water level; the removal of a portion of the point of land on the northern side of the Chenal Ecarte river, at Johnson's Bend, and which point makes a dangerous bend for vessels of any size to swing around.

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Departmental arrangements have been made for the purchase of 200 feet of that portion of point on northerly side of river at Johnson's Bend required for improvements at that point. The intention is to have this, and other work required in this river, completed during the coming season by the government dredge *Ontario*.

In the performance of the above work, some 6,780 cubic yards of clay were excavated, and in addition a number of sunken logs were removed.

Between November 8 and 27, 1909, the government dredge *Ontario* was employed on the widening of a channel in this river, and during that time two cuts of an average length of 170 feet each, to a depth of 19 feet below L.W.L. were made, on the north side of the Chenal Ecarté river approximately $3\frac{1}{2}$ miles west of the town of Wallaceburg, removing 8,600 cubic yards, scow measurement, of clay and sand.

Total expenditure during fiscal year 1909-10, is \$1,631.56.

TELEGRAPH ISLAND.

Telegraph Island is situated in the Bay of Quinte, about $13\frac{1}{2}$ miles east of Belleville. It is a small rocky island on which a lighthouse is located. The channel is immediately to the north of the lighthouse, and is comparatively narrow, with a rocky bottom.

At the last session of parliament, the sum of \$15,000 was appropriated for dredging, and on June 1 last, instructions were given to have the work performed by R. Weddell at the following prices per cubic yard scow measurement. Boulders, \$3; other materials, 95 cents; bucket measurement, boulders, \$2.50; other materials, 65 cents.

Work was begun on June 9 and closed for the season September 24, and consisted in the excavation of a cut 1,100 feet in length by 100 feet in width at the bottom, and to a depth of 15 feet below zero of gauge or extreme low water. Of this work, the entire area has been drilled, and one cut 28 feet in width has been dredged the entire length, and a second cut for about two-thirds of the length.

A further sum of \$2,788 was authorized on September 18 last in order that one cut might be completed for the entire length.

In doing this work some 5,798 cubic yards of rock were removed.

Total expenditure for fiscal year, 1909-10, is \$17,678.80.

THAMES RIVER WHARF (LIGHTHOUSE).

This wharf is located at the mouth of the River Thames, and was constructed for the purpose of serving the townships of Tilbury North, Tilbury West, Tilbury East and Rochester. A draught of 12 feet of water is available up to the dock.

On July 5, last, authority was received to expend the sum of \$750 to provide close-piling required to prevent further erosion to the dock, and which amount was on October 8 following, increased by \$72 to provide six spring piles along front of dock.

Arrangements were made with Mr. John Flook, of Chatham, for the performance of this work at the rate of \$5.55 per running foot of sheet-piling completed, and for the providing and driving of six spring piles for an additional sum of \$72, as also to provide extra filling required in rear of piling for the sum of \$20. The work was performed between October 14 and 30, and consisted in the driving for a length of 100 feet on easterly inner side of dock and a length of 25 feet on westerly inner side of dock, 4-inch hemlock sheet-piling 16 feet long, spiked securely to 6-inch by 10-inch oak walings, bolted above water line on 16 feet white oak and cedar main piles, driven at 6-foot intervals in rear. The necessary filling was then provided in rear of this new piling and levelled up. In addition, a small amount of filling and levelling up was done in face wall of dock where slight erosion had occurred.

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The six spring piles driven are white oak, 35 feet long, and fastened securely to the outer waling of dock by chalk streaks. The completion of this work left the dock in excellent condition.

Total expenditure during the fiscal year, 1909-10, is \$820.75.

THESSALON.

Thessalon, district of Algoma, is situated on the north shore of the north channel of Lake Huron. It is an important town containing several industries, and a number of large saw-mills. Large quantities of lumber are shipped from this place. It is a regular port of call for all regular liners. Population, 1,400.

On April 15 last, authority was given to expend the sum of \$140 for painting warehouse and repairing the wharf by day labour.

Work was commenced April 21 and completed April 30, and consisted in white-washing the inside and painting the outside of the warehouse and making slight repairs to the wharf, where necessary.

In doing the above work some 17 gallons paint and 12 lb. iron were used.

The following materials have been purchased by the department for proposed breakwater construction: 37,724 ft. B.M. hemlock, 16,668 ft. B.M. pine, 12,161 ft. B.M. tamarack and 7,020 ft. B.M. cedar, all of which are piled as near as possible to the site of the proposed work.

Total expenditure for fiscal year, 1909-10, is \$736.17.

TOBERMORY.

Tobermory, Bruce county, is situated at the northwest extremity of the Saugeen peninsula, and is perfectly sheltered from all winds. It consists of the east and southwest arms, the latter extending from lighthouse point W. by S½S 900 yards with an average breadth of 100 yards. The low limestone shore sinks down almost perpendicularly to 7 or 8 fathoms, which depth, over soft mud, will be found all over this arm, excepting near the bottom whence a muddy flat extends 120 yards to a depth of 18 feet. The harbour is too narrow to permit vessels to lie at single anchor, and they are compelled to make fast to the shore, and to protect their sides from the chafing on the rock; the government has constructed glance booms for the vessels to lie alongside.

On June 15 last, authority was given to expend the sum of \$1,300 and on July 5 last, this amount was increased to \$2,800 for the construction of glance booms by day labour.

Work commenced August 20 and was completed November 30, and consisted in the construction of 1,009 feet of glance booms of which some 606 feet is on the north side of the harbour and 403 feet on the south side. In addition, two iron ladders have been placed to enable sailors to make their lines fast to the mooring rings on top of the rock which varies in height from 10 to 12 feet.

In doing this work some 11,698 lbs. iron, 7,000 ft. B.M. maple and 26,316 ft. B.M. cedar were used.

Total expenditure for fiscal year, 1909-10, is \$2,211.98.

TORONTO.

Toronto, York county, is a city of some 400,000 inhabitants, situated on the north shore of Lake Ontario. The harbour is a circular basin 1½ miles in diameter, separated from the lake by a large island, formerly a peninsula, about 6 miles long, making a safe, well-sheltered harbour capable of containing a large number of vessels. There are at present two entrances, the eastern and western.

On May 7 last, authority was given to expend the sum of \$3,000 in repairs to piling, levelling up wharf and repairing and protecting a small crib near the eastern gap, by day labour.

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Work was commenced on May 1 and completed May 31, and consisted in the driving of about 100 feet of new piling, with piles from 36 to 40 feet in length and placing waling thereon and putting some 15 new anchor rods across the pier and levelling up and filling the superstructure of the pier at rear of piling with stone where it had sunk some 3 feet, also placing new timbers in the decking where necessary.

In doing this work, some 3,400 feet B.M. oak piles and 786 lbs. iron were used. The remainder of the materials were on hand from other works.

On March 19 last, authority was given to assemble the plant in preparation for the season's work, and work was commenced March 26 and continued until the repairs commenced, May 1.

At the last session of Parliament, the sum of \$320,000 was appropriated for harbour works at Toronto.

On May 15, 1908, a contract was awarded to R. Weddell & Co., for the sum of \$495,000 to construct a new western entrance to the harbour.

Work was resumed on March 18 and suspended for the season on December 24, again resumed on March 24, 1910, and is still in progress.

The work done this season consists in the placing of 26 cribs in position in the south pier of the new channel and 7 cribs on the north side, all of which are filled to the top with stone, also the placing of concrete blocks on the 7 cribs in the north pier, and the space between rows of blocks is partially filled with stone. The channel between the piers is dredged to depths varying from a minimum depth of 12 feet to a maximum depth of 18 feet.

On June 8, 1909, a contract was awarded to Messrs. Miller and Cumming for the extension of the island breakwater for the sum of \$39,000.

Work this season was commenced May 28 and completed November 30.

The work, this season, consisted in re-driving with new material 448 feet of sheet-piling and the completion of the 6 concrete groynes, each of which is 60 feet in length and vary in width from 12 to 18 feet, also the placing of heavy stone talus around the groynes. The total length of the extension is 1,500 feet.

On May 27 last, authority was given to expend the sum of \$55,000 in rebuilding the superstructure of the piers of the eastern channel, by day labour.

Work was commenced June 1 and carried on until March 31, and consisted in the construction of new concrete superstructure on the northerly portion of the west pier of the eastern channel as follows: 100 by 30 feet then 67 feet, varying in width from 30 to 20 feet, then 258 by 20 feet and 134 feet partially completed, having blocks in position, and on the south end 382 by 20 feet and 250 by 30 feet which leaves out of 1,649 feet some 458 feet yet to do.

In doing this work, some 3,000 barrels of cement, 51,819 feet B.M. pine, 13,126 feet B.M. oak, 19,554 feet B.M. hemlock, 230 cubic yards gravel and sand, 5,817½ tons stone, 83,946 lbs. iron, 170 cubic yards concrete and 7,110 feet piles were used.

The department dredge *Industry*, while being outfitted at Polson Iron Works, was tried out by doing some dredging in the approach to the Marine railway of the Royal Canadian yacht club. As the dredge was not fully equipped and the work performed intermittently, no record was kept of same.

Total expenditure for fiscal year, 1909-10, is:—

| | |
|--|-------------|
| <i>Re</i> piling, small crib, &c. | \$ 2,248 05 |
| <i>Re</i> assembling plant. | 723 86 |
| <i>Re</i> western channel. | 176,015 00 |
| <i>Re</i> island breakwater. | 14,710 30 |
| <i>Re</i> overhaul of material dredged from west channel . . | 25,368 92 |
| <i>Re</i> west pier, E. gap. | 54,977 93 |

\$274,044 06

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VICTORIA HARBOUR.

Victoria Harbour, Simcoe county, is situated on an inlet of the Georgian Bay, at the eastern end thereof, and is a well sheltered harbour easily approached from the open lake. Population, 1,500. There are extensive saw-mills at this place, and it is to be the principal terminal of the Canadian Pacific railway, which has constructed a 2,000,000 bushel grain elevator and is constructing large concrete wharfs.

At the last session of parliament, the sum of \$150,000 was appropriated for the continuation of the dredging and on May 4 last, authority was given to have the Canadian Dredge and Construction Company, proceed with the work at the following prices per cubic yard, scow measurement: boulders, \$2.25; other materials, 12½ cents; bucket measurement: boulders, \$1.75, other materials, 11 cents.

Work was commenced May 6 and carried on until December 6, and consists in the construction of a slip, which when completed, will be 600 feet in width by about 5,500 feet in length and 25 feet in depth.

During the season, the dredges removed 30,592 cubic yards of rock and 882,264 cubic yards other materials.

Total expenditure for fiscal year, 1909-10, is \$180,979.26.

WALLACEBURG.

Wallaceburg, Kent county, is a prosperous town situated on the Sydenham river and on the line of the Père Marquette railway, distant by rail 24 miles from the city of Chatham, and 31 miles from the town of Sarnia. Population, about 3,000. It is a port of entry. It possesses several large and successful industries such as a beet sugar factory, glass factory, &c., and the revenue collected on raw sugar brought to the beet sugar factory last season approximately amounted to \$275,000.

On July 6, 1909, authority was received to dredge approximately 10,000 cubic yards of material in providing a turning basin in the Sydenham river opposite the Wallaceburg Sugar Company's factory, work to be performed by the Manley Company, of Toronto, at the rate of 23 cents per cubic yard scow measurement.

Work was performed between August 16 and 27, 1909, and consisted of the providing of a turning basin, approximately 240 feet long, 130 feet wide, with a depth of 19 feet below L.W.L., also the dredging out of a slip, 70 feet wide and to the same depth as the outer turning basin. 14,172 cubic yards of clay were removed at a total expenditure during the fiscal year 1909-10, of \$3,293.60.

WENDOVER.

Wendover is a post settlement in Prescott county, on the south shore of the Ottawa river 31½ miles below Ottawa, and is also a station on the Canadian Northern Railway, 24 miles from Hawkesbury.

For detailed report on construction of wharf, see annual report 1907-8.

The pile-work wharf was repaired by day labour, September 24 to October 21, 1909. The approach, 18 by 288 feet; part of landing head, 20 by 60 feet, and slip 10 feet 9 inches by 37½ feet were repaired with 3-inch tamarack, laid longitudinally, over inch tamarack cross sills on top of old flooring. The balance of the head of wharf on both landings was repaired where required with tamarack plank. Most of the required timber, hardware and ballast for new ice-breaker was also procured.

Expenditure in 1909, \$1,163.65, and the work was done by day labour.

The ice-breaker was built (February 21 to March 7, 1910) of 10-inch by 10-inch timber, close-faced, cribwork 18 by 30 feet, and located 77 feet west of landing head, at a further cost of \$486.96 in 1910, making total cost of ice-breaker, \$961.89.

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WHITBY.

Whitby, Ontario county, is situated on the north shore of Lake Ontario 30 miles east of Toronto. Population, 2,300. This harbour is owned and controlled by the Port Whitby Harbour Co., and was purchased by them from the government in March, 1864, for \$35,150. The breakwater is 3,042 feet in length and the two protection piers at the entrance are, one 620 feet long and the other 394 feet long.

On October 4 last, authority was given to expend the sum of \$4,800 in dredging, the work to be performed by Mr. W. E. Phin at 22 cents per cubic yard, scow measurement.

Work was commenced October 9 and completed November 13.

The work consisted in the excavation of four cuts averaging about 35 feet in width and about 1,250 feet in length to a depth of 17 feet, and in doing this work some 43,120 cubic yards of other materials were removed.

Total expenditure for fiscal year, 1909-10, is \$9,591.24.

PROVINCE OF MANITOBA.

ASSINIBOINE RIVER.

A reconnaissance survey was made during the month of October of a portion of the Assiniboine river from Poplar Point to Winnipeg.

This was a consideration of the possibility of establishing navigation on the river in connection with the proposed diversion from the Saskatchewan river from Cedar lake, and the information contained will be included in the report of the navigability of the Saskatchewan river.

The St. Andrews level datum plane has also been carried up the Assiniboine river as far as St. François Xavier. Bench marks have been established on the Assiniboine river from the Canadian Pacific Railway Company's levels.

DELTA.

An examination was made in the early part of the season of shore erosion at Delta, on Lake Manitoba. Delta is the terminus of a branch line of the Canadian Northern railway from Portage la Prairie and is distant 15 miles from the latter place.

In the season of 1905, dredge *Manitoba* excavated a channel from the lake into a slough on the inner side.

Considerable erosion has since taken place at the mouth of this channel and a portion of the Canadian Northern railway track and station has been washed away, due primarily to this dredging.

A claim has been made by the Canadian Northern Railway Company for this damage. It would appear necessary to construct some 500 lineal feet of pile and brush protection to prevent any further erosion. The cost of this work would be \$1,000.

GRAND MARAIS.

A request for the services of dredge *Assiniboine* to release the steamer *Mikado*, stranded on a sand bar near the entrance to Grand Marais harbour, Selkirk county, having been granted, the dredge proceeded there on June 18. This work consisted in the dredging of a channel from the existing channel entering into the harbour to the steamer *Mikado*. The work was finally accomplished on July 3 and the dredge and equipment towed safely to the mouth of the Red river.

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The total expenditure on this work, amounting to \$520.04, was charged up to the Marine Underwriters of the steamer *Mikado*, and the amount forwarded to Ottawa in a cheque of \$913.04, covering above expenditure, together with an expenditure of \$393 previously incurred for the same purpose in the previous year.

GYPSUMVILLE.

The work at this place has consisted mostly of the cleaning out of the slip alongside the Manitoba gypsum company's loading dock.

This work had already been done in the season of 1907, a sufficient depth having been given at the time, but considerable filling in had taken place from wave wash from northwesterly winds.

Prior to undertaking this dredging, last spring, the Manitoba gypsum company were advised to construct a special form of protection, consisting of piles and brush, on the north side of the slip, to prevent any further filling in of the channel.

On June 13, dredge *Manitoba* and equipment towed to Gypsumville, at the north end of Lake Manitoba, arriving there on the afternoon of the 14th.

The material removed in deepening the slip was cast over at the back of the protection work.

It is expected that this work will be of a permanent nature and that any further filling in of the channel will be prevented by the protective works.

In addition to the above work, the turning basin for boats has been considerably enlarged, and a greater depth of water was given at two shallow places in the channel leading out into deep water in the lake.

During the period in which dredge *Manitoba* worked at Gypsumville, from June 15 to July 10, 4,990 cubic yards of clay and gravel were removed, of which quantity, 4,110 cubic yards were removed by scows, the remainder being cast over the protection work.

Considerable delay in doing the outer part of the work has occurred, due to heavy winds and, in the loading slip, from the Manitoba gypsum company's boats.

The total cost of this work has been \$1,105, making a cost per cubic yard of 22.1 cents.

ICELANDIC RIVER.

In the early part of April, from the 6th to the 9th, a survey and examination were made of the channel leading in from Lake Winnipeg to Icelandic river, with a view to determining the character of the work done there during the previous season by dredges *Assiniboine* and *Crane*, and for the purpose also of laying out a continuation of this work for the present season.

The portion of the channel dredged by dredge *Crane* was found to be in fair alignment, a few points, however, being found projecting into the channel. The average width of this channel would be about 40 feet, with a depth of 2.2 feet at lowest water.

The dredging done by dredge *Assiniboine*, the average width being 60 feet and depth varying from 3.3 to 5.5 feet at low water.

From the above examination it is proposed to have dredge *Assiniboine* go over this channel during the present season to increase the width and depth of the portion dredged by the *Crane*.

MOSSY RIVER.

During the month of March, 1910, a careful survey was made at the mouth of the Mossy river. Soundings were taken over the present channel, also over a large area to determine if there exists a more suitable location for a channel.

As a result of the survey, it was decided to improve the channel at the bend and to take a cut through the north side, from the bend outwards.

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NELSON RIVER.

An exploratory reconnaissance survey and examination was made of the Nelson river, from Lake Winnipeg to Hudson Bay, during the months of September and October.

The intention of this exploration was to gain an idea of the value of the scheme of developing navigation on that river.

As the time was limited, due to necessity of returning from the head of Lake Winnipeg on the last boat, nothing further than a rapid reconnaissance was attempted, but valuable information was obtained from which a fair idea of the possibility of navigation will be obtained.

Detail information was obtained at most of the suitable locations for any locks or dams and a gauging of the stream was made.

OAK POINT.

A number of representations having been made for the construction of some form of a safe harbour at Oak Point, Dauphin county, on the east side of Lake Manitoba, it was finally decided to have this work done, and immediately on the completion of the temporary dredging at the mouth of the White Mud river, the dredge *Manitoba* and equipment were sent to undertake this work.

Owing to the absolute lack of shelter of any kind at Oak Point, it was found necessary to keep the dredge and fleet at St. Laurent, 8 miles south of this point, and there await favourable weather conditions, the object being to dredge into shelter as quickly as possible.

The dredge was towed up from White Mud river to St. Laurent on August 16.

On the 18th an investigation was made at Oak Point and it was decided to take advantage of a natural location for this harbour which afforded a certain amount of protection from prevalent storms.

Owing to storms, it was not until August 24 that a favourable opportunity presented itself of starting this work which was finally completed on September 8.

A minimum depth of 6 feet at lowest water has been provided for, starting at that depth in the lake. The channel is some 600 feet in length in the lake and 50 feet wide. From the shore line, a channel 400 feet in length, 6 feet deep and 40 feet wide, has been constructed, leading into a safe harbour or turning basin. Altogether some 7,400 cubic yards of material were removed.

The construction of this harbour fills a long felt want at Oak Point, where considerable trading is done by means of light craft. Oak Point is the present terminus of the only line of railroad on the east side of the lake.

An agreement to convey to the Crown a roadway to this harbour was obtained from the property owners.

It is expected that maintenance to the extent of a few days dredging may be required next spring, to remove any filling in at the mouth of this channel.

The total expenditure on this work has been \$884, giving a cost of 12 cents per cubic yard.

RED RIVER.

A survey of the existing channels at the mouth of the Red river was completed on April 6, 1909. Considerable silting up of the new channel was observed.

From the results of soundings taken in the old channel it was found that it would not be necessary to have any work done on this channel during the present season beyond the proper placing of buoys and piles to mark out this channel.

Between March 17 and 25, 1910, careful surveys were made at the new and cast channels at the mouth of Red river.

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At the new chanuel, the portion dredged during 1908 had largely filled in. The minimum depth below the zero of the water gauge was 2.7 feet.

The east channel maintained its course. The outer portion, however, had filled in 2 or 3 feet and the minimum depth was found to be about 4½ feet below the zero of the water gauge.

ST. ANDREWS LOCK AND DAM, SELKIRK COUNTY.

The main portion of the contract for masonry and excavation, was completed at the beginning of the fiscal year and the work during this season has consisted mostly of clearing up and finishing.

The following is a summary of the different classes of work done and their location:—

Concrete—

| | Cubic yards. |
|---|--------------|
| Land pier for span 7 completed April 1, 3.. . . . | 182 |
| Sumps below stationary dam, east.. . . . | 15 |
| Retaining wall extending south from east abutment (May).. . . . | 321 |
| Landing in rear of east abutment (August).. . . . | 25 |
| “ “ (September).. . . . | 38 |
| 7 mooring posts in rear of entrance pier 3 (October).. . . . | 18 |
| Stairway on entrance pier No. 3 (October).. . . . | 5 |
| Total.. . . . | 604 |

Stone protection—

| | |
|---|-------|
| On side slopes of canal.. . . . | 1,200 |
| In rear of and about entrance piers.. . . . | 750 |
| In rear of lock walls.. . . . | 260 |
| About east abutment.. . . . | 160 |
| Total.. . . . | 2,370 |

Earth excavation—

| | |
|--|--------|
| (1) On east side of river in foundation of retaining wall and on site of repair shop.. . . . | 1,600 |
| (2) Grading on island.. . . . | 10,400 |
| (3) Grading, sloping, sides, &c., west side of canal.. . . . | 18,300 |
| (4) Ditching and grading road.. . . . | 1,800 |
| (5) Surfacing spoil banks with black earth.. . . . | 2,900 |
| Total.. . . . | 35,000 |

Gravel surfacing is partially completed as follows—

| | |
|--|-----|
| (1) Surfacing new road from north to south end of work.. . . . | 650 |
| (2) In rear of entrance piers and lockwalls.. . . . | 490 |

Total.. . . . 1,140

During the month of April, the temporary stop-log dam was placed by day labour at the upper end of the lock to protect finished slopes during high water.

Later, during the month of June, this stop-log dam was partially removed and a temporary chute made so that launches and motor boats could be passed up or down by hauling them on a carriage. The company operated this tramway by day labour during the summer and made about 40 lockages.

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Owing to a slide, back of entrance Pier 1, it was not possible to complete the grading of the west slope. On the east side of the river, the Canada Foundry Co. were not sufficiently far advanced to complete surface grading before the winter.

The work remaining to be done by Messrs. Quinlan & Robertson consists of:—

- (1) Grading at north end of lock in rear of ent. pier 1.
- (2) Graveling remaining surfaces, about lock, east side of river, 1,500 cubic yards.
- (3) Excavation on east side of river, 1,000 cubic yards.
- (4) Removal of remaining plant and putting all parts of work in good order.

Canada Foundry Company.

The first cars of material arrived on the site of the work on March 26, 1909, these being brought over on a spur line from Gonor on the main line of the Canadian Pacific railway. The erection has proceeded from the east side of the river; false work for two spans being used, one being used while the other was moved ahead.

The rate of progress was as follows:—

| Month. | Erected for Month. | Total Erected. | Riveted. |
|-----------------------|--------------------|----------------|----------|
| | Lbs. | Lbs. | Lbs. |
| April 30. | 214,919 | 214,919 | .. . . . |
| May 31. | 242,960 | 457,879 | 400,000 |
| June 30. | 837,963 | 1,395,842 | 350,000 |
| July 31. | 961,358 | 2,357,200 | .. . . . |
| August 31. | 1,333,700 | 3,710,900 | .. . . . |
| September 30. | 1,321,600 | 5,032,500 | .. . . . |
| October 30. | 950,500 | 5,983,000 | 500,000 |

On this latter date, the company had practically finished erection of the main parts of the bridge and dam.

The total weight erected, 5,983,000 lbs. is made up of:—

| | |
|---|-----------|
| | Lbs. |
| Bridge. | 4,000,000 |
| Curtain frames. | 1,333,000 |
| Castings, forgings, chains, &c. | 650,000 |
| Total. | 5,983,000 |

During the winter and the remainder of the fiscal year, the work had consisted of the installation of operating machinery on the working floor of the dam, placing curtains, fixing various tracks, riveting various odd points throughout structure and lining up erection of hand rails on highway floor.

At the end of the fiscal year, practically everything was in readiness to operate the movable dam on the opening of navigation.

Canada Foundry Company—Repair Shop and Highway Floor.

A portion of the Canada Foundry Company's contract, consisting of the erection of the repair shop and construction of highway floor of reinforced concrete was sublet by them to the J. McDiarmid company of Winnipeg.

The repair shop is practically completed with all machinery and electrical apparatus installed. All electrical machinery, installation and wiring has been installed by the Canadian General Electric Company.

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Beyond the building of forms for the reinforced concrete floor of the bridge, nothing has been done, owing to the abandoning of work on setting in of cold weather last fall.

John Burns, Contract for Lock Gates.

Work on the construction of the lock gates was under way at the beginning of the year and the last gate was completed by October 1. The contract called for a complete set for the lock and an extra or spare set. These latter have been sent to Selkirk and kept under water.

The gates were stopped in the lock during October and the early part of November, it being found necessary to unwater the lock for this purpose.

With the exception of a final adjustment in the mitring of both upper and lower gates and the shifting of one of the lower pivot blocks, the contract for the construction of these lock gates is completed and a final estimate was given, a deduction being made to provide for the work necessary for this final adjustment. It is expected that this final work will be completed in the early part of April of this season.

The amount of this contract was \$32,970.

Victoria Foundry Company, Ottawa. . .

Separate contracts were awarded to the above company, on November 2, 1909, for the construction and erection of the hydraulic sluice valves and lock gate operating machinery.

The above apparatus was constructed at their works, in Ottawa, and arrived here at the end of February, 1910, and preparations in progress and it is expected that the work will be completed early in April.

Inspection.

All inspection of work under contract for the construction of the movable dam, iron and steel, of lock gates, hydraulic sluice valves and lock gate operating machinery, has been carried on in an efficient manner by the Canadian Inspection Company.

PROVINCE OF SASKATCHEWAN.

BATTLEFORD.

The provincial government of Saskatchewan have completed the public highway bridge over the North Saskatchewan river that unites both the towns of North and South Battleford. The bridge has been thrown open to the general traffic, and has been generally appreciated by the latter.

CRAVEN DAM.

The Craven dam, built at the confluence of the Last Mountain lake outlet and the Qu'Appelle river, has answered a good purpose from the day of its construction, some years ago, to the present, in the regulation of the flow of Last Mountain lake outlet. Stop logs were made use of for the purpose aforesaid, and regulated by the parties interested in the work, particularly the navigation of Last Mountain lake.

LAST MOUNTAIN LAKE.

Last Mountain lake is situated in the counties of Regina and Humboldt, and the work in connection therewith is a development in the interests of the surrounding cities, towns and villages. Regina with a population of 12,500; Lumsden, 750;

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Craven, 500, and a well settled district bordering the lake shores, that aggregate a total length of about 120 miles.

The dredge and scows were built at Craven, and the tug *Ruby* also unloaded at that point, so that after the completion of the dredge and scows it became necessary to dredge a way out to the lake through the outlet. The total quantity excavated was 19,125 cubic yards, at a total cost of \$11,365.61. The class of material excavated consisted mainly of gumbo, that possessed adhesive propensities, making it difficult to empty the dipper, and often caused delays.

The channel was dredged to the lake and into the lake a distance, but not in deep water, although only a short distance from it. The water lowered over 2 feet during the latter part of the season, so that in order to secure a 7-foot channel a greater amount of dredging had to be done than would otherwise have been, if the water had maintained a more regular elevation. All the material was cast on both sides of the cut, as there was no deep water to dump in the outlet, but it is the intention after reaching deep water, to go back, widen the cut, make use of the scows and tug, tow and dump into deep water the material in order to make a permanent channel. The tug *Ruby* was employed keeping the dredge in fuel and moving it back and forth, as well as the scows.

The crew of the tug *Ruby*, composed of three men, were kept working on the dredge and doing some sheet-piling that was required in order to prevent some of the material running back into the cut.

Some repairs to the dredge and scows were carried on during the fall and spring, so that the total amount expended during the year just ended aggregates \$14,329.08, outside of \$59,054.46. that was paid owners of flooded lands as per Judge Cassel's judgment.

PRINCE ALBERT.

The work is removing boulders from the bed of the North Saskatchewan river at Prince Albert, that is situated in the county of the same name, said to contain a population of 8,000.

Within the year just ended, two scows were equipped, one with a crab winch derrick, side and stern spuds, capstan, &c., the other was equipped as a boulder seeker, with a well in the middle, that enabled us to load the same with stones that were pulled out of the river, and the work of removing the boulders was proceeded with, and a quantity removed and piled on the river bank, at a cost of \$1,998.

Wharf.

Plans and surveys, estimated cost, &c., were made during the year for protection and wharf work to be built at this point. Seeing that the lumber, stone and other traffic is considerable at this point, it seems advisable that a wharf that will answer two purposes, as indicated above, would meet the requirements, and be in the general interest.

The demand for this combined wharf and protection work by the people of Prince Albert, which has an approximate population of 8,000, appeared so insistent that surveys were made.

The North Saskatchewan river is a very extensive stream, and if improved, must, at an early date, be navigated to a much greater extent than it is at present, so that any encouragement given those interested in navigation in the way of improvement must encourage traffic, and necessarily be generally beneficial.

SASKATOON HYDRO ELECTRIC POWER DEVELOPMENT CO.

The city of Saskatoon's proposal to develop a water-power 15 miles north, for the purpose of generating electricity and transmitting same to the city of Saskatoon, has not come to maturity, as no work has been done in connection therewith. This work is situated in the county of Saskatoon.

ALBERTA AND SASKATCHEWAN.

NORTH SASKATCHEWAN RIVER.

The North Saskatchewan river traverses the counties of Red Deer, Strathcona, Edmonton and Victoria, in the province of Alberta, and the counties of Battleford, Saskatoon and Prince Albert, in the province of Saskatchewan, and part of the territory of Keewatin to Lake Winnipeg, a total approximate distance in a straight line from Edmonton of 700 miles, and the river is navigated by lumbermen for 100 miles west of Edmonton, making a total distance of 800 miles in an air line, and if measured by the contours of the river itself, would be at least twice that distance, that is, 1,600 miles of navigable waterway, that of course requires improvements at various points, such as at Coles and Tobins rapids, east of Prince Albert, and Grand Rapids near Lake Winnipeg, &c.

Steamers and other vessels ply at different points such as at Edmonton; both east and west; at Prince Albert and Cedar lake, and, if the rapids were improved to some extent, a greater traffic would ensue throughout the whole length of the river.

The building of snag boats, wing dams, and other improvements, that the department has in contemplation, must necessarily greatly increase the steamboat traffic, and be an inducement to vessel owners to increase their fleets, and thus be in a position to cope with a greater amount of traffic generally.

SOUTH SASKATCHEWAN RIVER.

The south Saskatchewan river flows through the counties of Medicine Hat, province of Alberta, and Moosejaw, Saskatoon and Prince Albert, in the province of Saskatchewan, an approximate total distance, measured by the river, of 1,200 miles, bordering the cities of Lethbridge, that has a population of over 7,000, and Medicine Hat, Alberta, with a population of over 5,000; Saskatoon, with a population of 10,000, and Prince Albert, Saskatchewan, with a population of 8,000, together with a great many intervening towns and villages and well settled districts bordering the river in question.

There has been nothing done in the way of improvement to the river in order to facilitate navigation. The wreck of the steamer *Medicine Hat* upon the provincial government of Saskatchewan highway bridge at Saskatoon, has disheartened and discouraged many who would engage in the trade if encouraged by improvement at those points.

PROVINCE OF ALBERTA.

LESSER SLAVE RIVER.

Lesser Slave river is situated in the county of Edmonton, about 90 miles west of Athabaska Landing, and is a stream discharging into the Athabaska river.

The work of ballasting the wing dams, removing boulders from the bed of the river and cutting across bars, has progressed within the last year; 9,385 cubic yards of boulders and coarse gravel has been moved within the first six months, at a cost of \$6,443.78. Some of the dams shifted a little, a year ago, but they have been put in place again, the top of the piles trimmed, and some fresh bolting done, so that the work has progressed satisfactorily at a comparatively small cost, aggregating \$11,959.42 for the year's operation.

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LOBSTICK RIVER.

The Valley Lumber Company applied for the privilege of building a dam across the Lobstick river for the purpose of establishing a log storage reservoir. The parties interested have done no work, only since the bush fire raged through their limit they have become anxious to proceed with the work, and cut all that is merchantable out of their limits.

The construction of the dam at the point indicated will cause the flooding of some land, but the parties interested have been notified to see about the damages that may accrue and be claimed by the owners of riparian rights should they be granted the privilege of doing this work.

MACLEOD.

Macleod is situated in the county of Macleod, and the proposed work of the Oldman river diversion at that point in order to protect the town of Macleod that has a population, it is stated, of 3,000, has not been proceeded with.

NORTH SASKATCHEWAN RIVER.

A small boat for the purpose of carrying on the river surveys, boom and general protection work was built at Edmonton. The importance of building this boat was manifest as it was found impossible to charter a boat suitable for rapid travelling and the general survey of the North Saskatchewan river.

WATERTON OIL, LAND & POWER CO.

The Waterton Oil, Land Co., that sought privileges to build booms and saw mills at the foot of Waterton lakes, in the county of Macleod, and also across the Belly river at Lethbridge, county of Medicine Hat, have not made a move within the year just ended.

NORTHWEST TERRITORIES.

SASKATCHEWAN RIVER.

A survey and examination of the Saskatchewan river, from The Pas to Lake Winnipeg, was made in the month of October.

The improvement of this river for navigation has been under consideration for some time and a particular study was made of the above portion of the river, based on alternative schemes of 9-foot draft and 5-foot draft. The possibility of a diversion from the Saskatchewan river, at Cedar lake, into Lake Winnipegosis, thence to Lake Manitoba and Assiniboine river to Winnipeg has also been investigated. Incidentally the St. Andrews level datum plane has been carried up through the above mentioned rivers and lakes to the Saskatchewan river.

BRITISH COLUMBIA.

COLUMBIA RIVER.

March 29, the *Nakusp* was put in commission, cutting a bar through and completing a channel which skirted the island opposite the town of Revelstoke and intersecting the back channel or slough; this work was completed on May 15, when the dredge was moved to a bar below Cariboo creek near Burton city. Here, effective

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work was being done until high water made it impracticable to continue, and the dredge was moved to Nakusp on the 29th.

On June 1, the crew was laid off, Captain Sanderson bringing her to St. Leon and taking charge as caretaker until the end of July.

In the beginning of August, she was moved to Nakusp and underwent a complete overhauling, which occupied from August 10 to October 5.

On October 7, the *Nakusp* steamed to Arrowhead and was employed until October 12 in removing snags from the channel west of Cottonwood island. From October 13 to 21, the time was employed in moving from Arrowhead to Burton, repairing boiler, taking on fuel and otherwise getting ready to start dredging at Cariboo bar, below Burton, which commenced on October 23 and continued until November 17. About 8,000 cubic yards of wash gravel and boulders discharged into the channel from Cariboo creek during high water was removed, and the steamboat channel was considerably improved.

On November 18, the *Nakusp* was taken to Edgewood and employed until the end of the month in raising an engine and pile driver which had sunk off a barge early in the autumn, and in placing some spar buoys in the narrows between the Upper and Lower Arrow lakes.

On December 1, dredging was started at Cottonwood bar, a short distance below Cariboo bar, and continued until December 23. During that time, about 7,500 cubic yards of hard, coarse gravel was cut off the point of the bar projecting out into the steamboat channel and thereby increasing the width of the channel to a considerable extent. The current at Cariboo bar and Cottonwood point is very swift and much difficulty was experienced in holding the dredge in place and considerable time was occupied in getting out and taking in cables to let steamboats pass. As the weather got so cold by December 24, dredging was not continued to advantage; the *Nakusp* was taken to St. Leon and tied up for the winter.

On the trip up from Burton, a number of snags were removed from the steamboat channel.

On March 14, 1910, the *Nakusp* was again put in commission and on the 17th proceeded to Burton, commenced dredging on Cariboo bar on the 18th and was still working there on March 31, 1910.

The digging was very hard but fair progress was made.

COLUMBIA RIVER (ABOVE GOLDEN).

On May 10, 1909, the snag boat *Muskrat* was put in commission.

Throughout the whole distance, about 80 miles, between Golden and Windermere, the river banks were cleared of sweepers, overhanging brush and all snags, sunken railway ties, logs, &c., were removed from the steamboat channel.

Piles and timber required for a wharf at Spillimacheen were got out and put in place by the end of June when the work was discontinued until after high water. During the summer, a large number of saw logs and railway ties were driven by the Columbia River Lumber Company from the head of the river to the mill at Golden. A number became waterlogged and partly sunken in the steamboat channel, in removing which, the crew of the *Muskrat* was more or less engaged throughout the whole season.

The wing dams at Toby creek, Redrock, Horsethief creek and Birch Tree channel, were repaired and, with a Stanley scraper, a channel was cut through the sand bar at Toby creek.

On October 5, work was resumed on the wharf at Spillimacheen and continued until its completion on the 9th of the same month. The remainder of the season was occupied in snagging. On November 6, the crew was discharged and the *Muskrat* sent out of commission.

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The amount expended on this service was \$4,393.52.

The construction of a barge for use in connection with a Stanley scraper was commenced at Golden on February 3, 1910, and it was completed and launched on March 31. The dimensions are: Length, 50 feet; beam, 16 feet, and depth, 3 feet 6 inches; it is strongly constructed throughout and planked with 3-inch fir. The total cost was \$830.70.

COLUMBIA RIVER.

Dam at Revelstoke.

A party was engaged between August 28 and October 4, 1909, in repairing the piling, bracing and planking, and in quarrying and hauling rock to complete the loading of the outer or western half of this dam. The rock was quarried about 2 miles down stream from the dam, loaded on scows and towed to the dam by the steamer *Revelstoke*.

The dam, when the work terminated, was filled to the top of the piling throughout its whole length and presented an appearance of solidity, and it may now be regarded as capable of withstanding any force likely to be exerted against it.

The total cost of the work amounted to \$4,256.08. The amount of rock loaded on the dam was about 2,000 yards.

COQUITLAM RIVER.

The work done on this river consists in the removal, when possible, by cutting up, blasting and burning, the trees, brush and logs cut along the river which are brought down with every freshet and caught on the shallow places and bars, and deflect the current and cause the banks to wash. The principal damage is caused by the logs as, in the dry weather in the summer when the water is low and the logs are dumped into the river in quantities but do not start down the river until it is very high, the logs all start down together and the loggers make little or no attempt to drive them and, at the first shallow place, they will jam and the current is deflected into one bank or the other, thus the channel is becoming more crooked every year.

This work of clearing was not carried on continuously but was done at various times during the year, when the water was low and at its most suitable stage.

The total expenditure for the fiscal year ended March 31, 1910, was \$1,484.57.

FRASER RIVER.

Generally.

The work done during the fiscal year ended March 31, 1910, represents general repairs to works now constructed and such new works as were considered necessary as aids to navigation in the ship channel between New Westminster and the Strait of Georgia, and for river navigation to its practical head at Chilliwack, some 50 miles above New Westminster.

The works executed comprise:—

Repairs to Nicomen dams Nos. 3 and 4, by facing with earth-filled gunny sacks, and protection by wire fencing from cattle, &c. Work was started May 18 and finished on June 10, 1909. Amount expended on this work was \$988.70.

Repairs to scows at ferry landing at Agassiz and Rosedale which were damaged by ice; cleaning snags, &c., from Minto Landing. This work was started on April 1 and continued at various times during the year when the stage of water would permit. The expenditure was \$1,205.93.

A movable corrugated iron warehouse was erected at the lower landing at Chilliwack for use when stage of water will not permit of steamers reaching the upper landing; this moveable warehouse seems to be the best solution of the problem of

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affording continuous accommodation at this point. Work was commenced on October 18 and finished November 17, 1909. The expenditure was \$1,088.68.

Dam No. 3 at Annieville bar was completed on May 10; this dam or groyne was built in a similar manner to groynes Nos. 1 and 2, that is, a row of sheet-piling was driven from shore out, a distance of 600 feet and sand was pumped on each side by the dredge *King Edward*; the height is placed at ordinary flood level. The expenditure was \$1,194.

On May 11, the camp was moved to the government rock wharf at the mouth of the river; this wharf was repaired and lengthened to accommodate the dredge *Fruhling* while working at the sand heads, at a cost of \$1,803.69.

Repairs were made to the protection works at Garry Point by reinforcing the mattress work with 732 tons of rock at a cost of \$1,306.20; the work was completed on June 18, 1909.

After the annual freshet was over, it was found necessary to strengthen the ends of the three wing dams that had been built on Annieville bar as the bed of the river at the outer ends had scoured. Dams Nos. 1 and 3 were weakened at the outer ends and had to be strengthened with brush mattresses and rock. About 200 feet of dam No. 2 was washed away; this has been rebuilt with rock and brush laid in between two rows of piles, 12 feet apart, and brought to a few feet above low water. This work was not quite finished by March 31, 1910, and will probably be completed about the end of April, 1910. The cost of repairs was \$12,702.35.

The snag boat *Samson* was employed during the year in clearing snags out of the channel between Chilliwack and the mouth of the Fraser river, and attending to the buoys marking the deep water channels, surveying, &c., together with a certain amount of salvage work in connection with sunken steamers, &c., for which a charge of \$50 a day is exacted.

From September 14 to 18, 1909, the *Samson* was sent to remove some snags at the mouth of the Squamish river, at the head of Howe Sound.

During the year, 289 snags were removed, and the total expenditure for the fiscal year ended March 31, 1910, was \$15,581.12.

FRASER RIVER.

Fort George Canyon.

Work consisted in blasting rock from the channel and as the water was at an extremely low stage, conditions were very favourable for the removal of the rocks in the high water channel which was dug during the month of November; this work will be a great benefit to navigation.

Three points of rock were also removed from the main channel. The expenditure for the fiscal year ended March 31, 1910, is \$2,597.56.

LADYSMITH.

Repairs consisted in removing the upper works of the wharf and driving new piles to replace those eaten away by the teredo. Work was commenced on September 18 and completed on November 17.

Expenditure for fiscal year ended March 31, 1910, is \$1,910.21.

NEW WESTMINSTER.

On June 19, work was started on repairs to the wharf, the approach was renewed and fender piles were driven along the front.

A small office was built during the month of February, for the superintendent of dredges.

Repairs to the wharf were completed on July 10, 1909.

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The expenditure for the fiscal year ended March 31, 1910, for repairs and office, is \$1,011.15.

NAAS RIVER.

The fishing grounds of this river were cleared of snags, drift, &c., by the snag boat which was put in commission on May 22, 1910, and worked continuously until August 21, when the fishing was practically over for the season.

Expenditure for fiscal year ended March 31, 1910, was \$2,765.21.

NANAIMO.

The dredge *King Edward* left New Westminster on November 30, 1909, and arrived at Nanaimo on the same day.

Dredging was commenced on December 10; the delay in starting the work was caused by rough weather which made it impossible to tow the pontoons, &c., across the Strait of Georgia.

The work consisted in widening the south channel and in dredging out a turning basin at the west end of the south channel which was finished on February 23.

From February 24 to March 5, the dredge was inspected and the plant was made ready to be towed to Vancouver.

The quantity of material dredged at Nanaimo was 194,370 cubic yards.

The expenditure for the fiscal year ended March 31, 1910, was \$8,000.

OKANAGAN RIVER.

The dredge *Heron* was put in commission on March 29, 1909, and kept steadily at work throughout the whole fiscal year in widening and deepening the channel between Okanagan and Dog lakes.

The floor of the Okanagan river shows a very uneven or wavy profile, consisting of alternating deep stretches and shallow bars, from a point 4,800 feet from where the river leaves the Okanagan lake, for a distance of about $4\frac{1}{2}$ miles and the difference in elevation is about 13 feet. Practically the whole of this drop is in $2\frac{1}{2}$ miles. An attempt is being made by dredging out the bars, to distribute the grade uniformly throughout the whole distance between the two lakes with the object of making the velocity of the current uniform.

One cut has already been made through each bar and there is already a marked improvement in the river; after the dredge has again trimmed off the bars, there will be a channel not less than $2\frac{1}{2}$ feet in depth and 30 feet in width throughout the whole distance between the two lakes. Owing to the tortuous course of the river, the current is impeded and will not be too great for a steamboat of ordinary power.

In addition to the dredging done, a large number of snags were removed, and the banks were cleared of overhanging brush and sweepers.

After the dredging is completed, some work will be required to protect the channel from obstruction by wash from Beaver creek; one or two caving banks, and gravel bars of loose material in the wider stretches of the river. There are several places where the river is now in two or more channels; it is intended to dam the subsidiary channels and confine all the water to one main channel.

The quantity of material removed is, approximately, 21,000 cubic yards of all sorts of gravel.

The expenditure for the year ended March 31, 1910, is \$9,324.36.

SKEENA RIVER.

The snag boat *Cygnel* was put in commission on April 1, 1909, and was continuously employed until August 21, when she was laid up, as the appropriation was exhausted. The work done during the year consists in removing snags and drift which

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are brought down the Skeena river during freshets and deposited in the channel and on the sand bars. These snags, if not removed, are a menace to navigation and cause a great deal of damage to the salmon nets which are used in these waters.

The expenditure for the fiscal year ended March 31, 1910, was \$5,999.29.

UNION BAY.

Union bay wharf is situated on the east coast of Vancouver island, where there is quite a settlement. The approach is 600 feet long and 16 feet wide; the wharf proper is 100 by 40 feet with a freight shed erected thereon 18 by 36 feet; the depth of water at low tide in front of the wharf is 14 feet.

Work on construction was commenced on June 1, and the wharf was completed on September 14, 1909.

The expenditure for the fiscal year ended March 31, 1910, was \$3,994.69.

VANCOUVER.

The dredge *King Edward* left Nanaimo on March 5 to commence dredging in False creek between the Great Northern railway trestle and the wharfs on the west side of Westminster avenue; on March 4, the tug *Etta White* was engaged to tow the scows and pontoons from Nanaimo to Vancouver and, when off Bowen island, a storm came up and the 17 pontoons and the water scow were lost and the blacksmith shop was badly damaged but eventually towed into Vancouver and repaired.

The loss of the plant delayed dredging operations until March 21, but from that date until the end of March, satisfactory progress was made and 560 feet of the cut was dredged, 130 feet wide and 8 feet deep at low water; 21,500 cubic yards of clay and mud were removed.

This work is being done at the request of the B. C. Electric Railway Company and other wharf owners to enable them to get their scows, &c., up to the wharfs at all stages of the tide.

The expenditure for the fiscal year ended March 31, 1910, was \$2,550.

VICTORIA.

The dredge *Ajax* worked in Victoria harbour from April 19 to November 2 deepening the entrance from Shoal point outwards to 20 feet at low water except when it was too rough and windy to work at the entrance, and was also employed dredging the channel around Dredger rock. The quantity of material removed was 91,670 cubic yards. From November 9 to December 2, work was done in front of the Chemical Company's wharf where the channel was deepened to 20 feet at low water; 10,830 cubic yards of material were removed.

The dredge was placed under repairs, and from December 16 to January 15, 1910, the dredge cut a channel 16 feet deep at low water from the main channel into Bannerman & Hornes wharf, and removed 15,600 cubic yards of mud and clay.

Repairs were again required, and from February 14 to 22, work was done at the outer wharfs when the three berths were deepened to 30 feet at low water. The quantity of material removed was 14,820 cubic yards.

From February 23 to March 10, the inner channel around Dredger rock was deepened to 20 feet at low water, and 18,180 cubic yards of material were removed.

From March 16 to 31, work was done on the inner harbour to 20 feet at low water where the Grand Trunk Pacific wharfs are to be built. Quantity of material removed was 12,600 cubic yards.

The total quantity of material removed during the year by the dredge *Ajax* was 163,700 cubic yards at an average cost of 17 cents per cubic yard.

The expenditure for the fiscal year ended March 31, 1910, exclusive of repairs, was \$28,294.99.

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The dredge *Mudlark* was employed deepening the upper portion of the harbour above the railway bridge to 20 feet at low water, which will give ample depth for ships going to the mills and marine railways that are located there. The quantity of material removed was 127,000 cubic yards, at an average cost of 16½ cents a yard.

The expenditure amounted to \$20,964.64.

Tuzo Rock.

Eight platforms were drilled between April 10 and August 8. Each platform covers an area of 540 square feet, and 2½-inch holes are drilled about 3 feet apart each way; the total length of holes drilled is 1,979½ feet.

Dredger Rock.

From August 9, 1909, to March 31, 1910, the drill plant worked at lowering the rock to 20 feet at low water; the former depth obtained by blasting was 16 feet, but as the channel is now being deepened to 20 feet at low water it was necessary to lower this rock to the same depth; 18 platforms have been blasted, representing an area of 9,720 square feet, and all holes are drilled to 22 feet at low water; the total length of holes, 2½ inches diameter, is 3,469½ feet.

The expenditure amounted to \$9,461.81.

WILLIAMS HEAD.

The work done at the quarantine station, consisted in making general repairs to the wharf, roads, &c., and improving the buildings on the wharf.

A new shed was built over the di-oxide blast machinery, on the main wharf, and the copper covering of the piles was patched where necessary.

The buildings on the main wharf and the water tank were painted; the ditches and culverts of the roads, in the station grounds, were cleaned out and repaired, and some necessary repairs were made to the road leading to the station. A new, five pile, dolphin was driven, coppered piles, near the small wharf, and the small wharf had some minor repairs made such as driving new fender piles, &c., and the roof of the coal shed was repaired.

The expenditure for the fiscal year ended March 31, 1910, was \$4,985.20.

DREDGING OPERATIONS.

PROVINCE OF NOVA SCOTIA.

The following dredges, viz.: *Canada*, *Cape Breton*, *Geo. McKenzie*, and *Northumberland*, were employed in Nova Scotia during the whole of the dredging season of 1909. The first named dredge continued dredging until January 18, 1910, the last three named going into winter quarters previous to the end of the year 1909, for necessary overhauling and repairs.

During the above mentioned period, dredging was done in the following places:—

North Sydney, Cape Breton county, near Nova Scotia Steel Company's piers.

North Sydney, Cape Breton county, near Sydney Coal Company's wharf.

Sydney, Cape Breton county, near Dominion Coal Company and Sydney Coal Company.

Cheticamp, Inverness county, widening and deepening channel.

South Ingonish, Victoria county, widening and deepening channel.

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Mulgrave, Guysboro county, dredging Intercolonial railway dock.
St. Mary's river, Guysboro county, improving channel.
Pictou, Pictou county, dredging Intercolonial railway dock.
East River, Pictou county, making new channel.
Liverpool, Queens county, improving channel and removing bar.
Port Mouton, Queens county, widening and deepening channel.

CHETICAMP.

Cheticamp (Eastern Harbour), Inverness county, is a harbour and settlement on the Gulf of St. Lawrence, 67 miles north of Port Hood.

The harbour is entered from the north by a channel through sand flats. This channel has been dredged from time to time since 1875, at which time there was a minimum depth of $3\frac{1}{2}$ feet at extreme low water, until July, 1908, when an examination of the channel showed a minimum depth of 9 feet at extreme low water in a channel 50 feet in width. Spring tides rise 4 feet.

A contract was entered into with the Dominion Dredging Company for the improvement of the channel to a depth of 16 feet at extreme low water and a width of 100 feet at the bottom.

Dredging was in progress by the company from June 15 to July 7 in a cutting 1,800 feet in length, 36 feet in width, at bottom, and $6\frac{1}{2}$ feet in average depth, to the eastward of the centre line of channel. The minimum depth at extreme low water obtained in this cutting was $12\frac{1}{2}$ feet; material removed, 49,443 cubic yards of fine sand and mud.

Operations were suspended by the company, and continued by the departmental dredge *Cape Breton*. The *Cape Breton* worked from July 28 to September 3 in a cutting 2,400 feet in length, 50 feet in width, 14 feet of which was over the west side of the cutting made by the company's dredge, and 7 feet in average depth. The depth required, 16 feet at extreme low water, was obtained everywhere in this cutting; materials removed, 37,325 cubic yards of fine sand and mud.

EAST RIVER, PICTOU COUNTY.

The dredge *Northumberland* was engaged from May 21 to November 30, dredging 590,780 cubic yards of mud, clay, sand and oyster shells, making new channel as per departmental survey.

INGONISH (SOUTH).

Ingonish (South), Victoria county, is a fishing settlement and harbour on the Atlantic coast, 25 miles north of the entrance to Sydney harbour.

The entrance into the harbour at the head of South bay was originally 60 feet in width with a depth of 5 feet at extreme low water, or 10 feet at extreme high water.

Works undertaken in 1873 for the purpose of improving the entrance were completed in 1876. On their completion, there was a channel 200 feet in width with a depth at extreme low water of nowhere less than 14 feet and its north side was protected by a pier 560 feet in length.

An examination made in February, 1902, showed a channel 860 feet in length, varying in depth from 13 to 15 feet at extreme low water and in width from 160 to 100 feet; the channel at the width of 100 feet being obstructed by a large boulder over which there was a depth of only 9 feet at extreme low water.

No dredging was undertaken from 1876 until 1908-9, when the dredge *Cape Breton* began the excavation of a channel to a width of 180 feet and a depth of 20 feet at extreme low water. On the suspension of operations for that year, about one-half the proposed channel had been completed.

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The dredge *Cape Breton* was engaged September 10 to December 10, 1909, in completing dredging to 20 feet at extreme low water in a channel 180 feet in width at bottom, with the exception of about 30 feet in width on each side where the depth at extreme low water varies from 10 to 19 feet.

The work performed includes a cutting about 620 feet in length, 120 feet in average width and 5 feet in average depth, and two side cuttings each about 860 feet in length, 30 feet in width at bottom and 6 feet in depth.

Materials removed, 39,585 cubic yards sand, stones, clay and boulders.

LIVERPOOL, QUEENS COUNTY.

The dredge *Canada* was engaged from April 17 to June 29 removing 25,400 cubic yards of sand, sawdust and mud, improving and deepening channel and entrance. (The dredge *Canada* was engaged from July 3 preparing for, and removing to Port Mouton, Queens county.)

MULGRAVE, GUYSBORO COUNTY.

The dredge *Geo. McKenzie* was engaged from May 15 to 20, removing 292 cubic yards of rock and hard clay, under transfer apron in inside end of Intercolonial railway dock. (Dredge *Geo. McKenzie*, May 21 to 31 dismantling, towing to St. Mary's river, Guysboro county, and refitting there).

NORTH SYDNEY.

The dredge *Cape Breton* was engaged from June 12 to July 2, removing 14,175 cubic yards rock, clay and mud near Nova Scotia Steel and Coal Company's piers, and from July 5 to 7 at Sydney Coal Company's wharf removing 630 cubic yards ballast.

PICTOU.

Pictou harbour is the finest harbour on the southern shore of the Gulf of St. Lawrence and has a depth of over 30 feet at extreme low water, except at the entrance, which is obstructed by a bar over which there is a depth of 21 feet at extreme low water. Spring tides rise 6 feet.

Dredging has been performed by the department over the bar at the entrance, and inside the harbour around the various piers.

During the year 1909-10, the departmental dredge *Geo. McKenzie*, operating from November 5 to 30, deepened on each side of the eastern pier of the Intercolonial railway; on the east side to 20 feet at extreme low water in a cutting 200 feet in length, 50 feet in width at bottom and $7\frac{1}{2}$ feet in average depth, and on the west side to 25 feet at low water in a cutting 40 feet in length, 30 feet in width and $6\frac{1}{2}$ feet in average depth.

Materials removed, 5,715 cubic yards of mud.

PORT MOUTON, QUEENS COUNTY.

The dredge *Canada* was engaged from July 4 to November 29 removing 62,800 cubic yards of mud and rocks, and from November 30 to January 18, 1910, was engaged with the assistance of divers in hoisting and removing about 737 tons of heavy boulders. The dredge then went into winter quarters at Liverpool, and part of the crew, assisted by divers and tug, continued the removal of heavy boulders until March 24, when work was suspended.

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SYDNEY.

The dredge *Cape Breton* was engaged from July 8 to 16, removing 5,775 cubic yards of boulders and hard clay at Dominion Coal Company's piers. (Dredge *Cape Breton*, July 17 to 27 dismantling, towing to Cheticamp, and refitting there).

ST. MARY'S RIVER.

St. Mary's river, Guyshoro county, is a fine harbour, 65 miles in length, traversing valuable timber lands and discharging into the Atlantic ocean, 48 miles to the westward of Cape Canso. The depth at extreme low water in a channel dredged in 1900-1 to about 14 feet through a bar at the entrance is now about 12 feet, and thence in a narrow and tortuous channel to within half a mile of the village of Sherbrooke at the head of tide 8 miles inland, from 18 to 12 feet. Spring tides rise 6 feet.

In 1908-9, improvements of the channel by the removal of a point of reef just within the entrance and of some boulders near the head of navigation undertaken in 1907-8, were completed with the exception of the removal of some rocks, broken up boulders, in the channel near the Scotia Milling Company's wharf, and the dredge *Geo. McKenzie* was engaged in dredging to 10 feet at extreme low water in a channel 80 feet in width at bottom through a bar of gravel and boulders between Goldenville wharf and Sherbrooke, over which the minimum depth at extreme low water was originally $3\frac{1}{2}$ feet.

During the year 1909-10, the dredge *Geo. McKenzie* was engaged from June 1 to September 16 in completing the work undertaken in 1908-9 between Goldenville wharf and Sherbrooke by dredging to give an additional width of 20 feet on the west side of the 80-foot channel and in forming a turning basin.

The work performed included a cutting 1,800 feet in length, 25 feet in width and $3\frac{1}{2}$ feet in average depth, and a turning basin 300 feet in length, 200 feet in width and $3\frac{1}{2}$ feet in average depth.

Materials removed, 21,870 cubic yards of sand, gravel and boulders.

The further improvements contemplated are: dredging at Birch Point on each side of the channel to 13 feet at extreme low water, involving the removal of 35,000 cubic yards of mud and fine sand; and the removal of broken up boulders and of a point above the Scotia Milling Company's wharf.

Generally.

Reviewing dredging operations generally in Nova Scotia it should be stated that much time is necessarily lost in the removal of plants from one locality to another, but our most serious loss of time is due to severe weather conditions, when working in exposed or unprotected places.

The work performed at North Sydney and Sydney was practically completed according to survey, but has since then, owing to severe storms, filled in to some extent, and further dredging will be required from time to time in order to maintain the depth of water required for commercial purposes.

The work done at Cheticamp was in accordance with engineers' survey, and was appreciated by the local people. This place is, however, on our programme for further improvement during the present season.

Dredging performed at South Ingonish, Victoria county, was in accordance with engineers' survey, but was not completed, when at the end of the season owing to ice forming, the dredge had to be removed to winter quarters for safety of plant, and for overhauling and repairing machinery and hull. A small amount of dredging is still required at this place, in order to complete the work as laid out. With the work already done, however, the Dominion government cable steamer *Tyrian* of 1,039 tons, drawing 20 feet of water made an easy entrance to the inner harbour.

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The work done at Mulgrave was the removal of a small quantity of material, under the transfer apron from the railway to the transfer steamer, to permit the lowering of same to position.

The work done at St. Mary's river was completed to the satisfaction of the district engineer. This was a difficult place to dredge owing to the large number of logs and heavy boulders encountered, and consequently a slow and tedious work to complete.

The dredging done at Intercolonial Railway docks at Pictou was in conformity with the district engineer's survey. A good deal of time was lost here owing to the very long haul for dumping outside and at a season of the year when weather conditions did not always permit tug, with barges in tow, going outside harbour limits.

Regarding the dredging done at East river, this was a continuation of the work begun the previous season and much yet remains to be done. A good deal of trouble was experienced while operating here, owing to the presence of large beds of oyster shells, which cut pontoon sleeves, and made the upkeep for this particular item much more expensive than formerly.

The work done at Liverpool was in continuation of work performed previously, and the dredge *Canada* is again employed at this place this season.

The work at Port Mouton, although slow and tedious was performed under the best conditions possible. The presence of tremendous quantities of rocks, and heavy boulders, made it a severe locality in which to work a ladder dredge. During the season, a stone lifting device was installed on the dredge *Canada* and divers and drillers were employed in order to facilitate the work. After the dredge went into winter quarters at Liverpool, a part of the crew together with divers and drillers, continued the removal of rocks with the assistance of a tug rigged with a stone lifting derrick. In the month of December, during a severe gale of wind and snow storm, two barges belonging to the dredge *Canada* parted their moorings and were driven ashore. Considerable difficulty was experienced in floating these, and when this was done it was found necessary to have them placed on the marine slip at Liverpool for repairs.

On December 18, 1909, the dredge *Cape Breton* left South Ingonish for Point Tupper, C.B., arriving there on the 21st instant and on the 23rd instant was hauled on the marine slip for wintering and general overhaul and repairs. Figuring on former weather conditions, at this date in the Strait of Canso, this was the last boat to be hauled, and the owners closed down the slip for the winter immediately thereafter. Two steel barges (part of the plant) also wintered at Point Tupper, being moored in the upper harbour.

On December 4, 1909, the dredge *Geo. Mackenzie* was hauled on the marine slip at Pictou, N.S., for wintering, general overhaul and repairs, also for the purpose of making some necessary changes in her equipment. The water boat of this plant also wintered on slip, while the barges were moored at Market wharf.

On December 1, 1909, the dredge *Northumberland* suspended operations in East river, Pictou county, and on December 3 was towed to winter quarters at Market wharf, Pictou, for general overhauling and repairs. All pontoons forming a part of the equipment of this plant, were wintered on shore flats near Abercrombie.

On January 18, 1910, the dredge *Canada* was hauled on the marine slip at Liverpool, N.S., for general overhauling and repairs. This plant had been working under severe strain for the previous months and was much in need of necessary repairs to machinery.

With regard to the wintering of the different plants in Nova Scotia, it may be stated that the date on which operations are suspended, and the different plants placed in safe winter quarters, is governed by previous weather conditions in the locality where plant is situated at the time.

The government tug *Rona* was wintered at Mulgrave, in the Intercolonial railway dock, and necessary repairs effected by members of the crew.

Below is a memorandum of quantities of material removed by the several dredges operating in Nova Scotia during the fiscal year 1909-10:—

| Dredge. | Cubic Yds. |
|---------------------------------|---------------|
| <i>Cape Breton</i> | 98,070 |
| <i>Canada</i> | 88,200 |
| <i>Geo. McKenzie</i> | 31,502 |
| <i>Northumberland</i> | 590,780 |
| | <hr/> 808,552 |

(The dredge *Geo. McKenzie* was employed at Port Elgin, N.B. from September 16 to November 5, and work performed there is not included in above statement.)

Attached herewith is a memorandum showing in detail the work performed by the several dredges operating in Nova Scotia for the fiscal year 1909-10.

P.S.—In re classification of disbursements dredge *Canada*, see months of January, February and March, 1910, when the monthly charge for towage was considerably increased, owing to the necessity of engaging a second tug boat to assist in the removal of heavy boulders while working at Port Mouton, Queens county, N.S., which it was thought proper to place under the heading of 'towage.'

The following dredging was done under contract:—

FOURCHU.

Fourchu harbour, Richmond county, is on the Atlantic coast of Cape Breton Island, 18 miles southwest of Louisburg harbour. The entrance, which is obstructed by a bar of mud, gravel and sand, over which there was originally about 1½ feet at extreme low water, was improved by dredging in 1896 and 1897. Soundings taken in November, 1908, showed a minimum depth, at extreme low water, of 4½ feet. Spring tides rise 6 feet.

Inside the entrance there are extensive mud flats covered, at extreme low water, with from 3 to 5 feet, except in a channel 80 to 100 feet in width with depths varying from 10 to 15 feet, at extreme low water, extending inward 3,000 feet, and over a small area in Hardy's cove, 4,500 feet from the entrance where the maximum depth at extreme low water is 11½ feet.

A contract was entered into on October 26, 1908, with the Cape Breton Dredging Company, with the object of deepening through the bar to 10 feet at extreme low water in a channel 1,800 feet in length and 80 feet in width at the bottom, and of improving the channel inside over a distance of 2,520 feet by dredging to 10 feet at extreme low water on each side, to give a uniform width of 180 feet at the bottom, from 660 feet from zero inward. Dredging (overcasting) over the bar, was in progress from November 12 to December 9, 1908, when operations were suspended for the winter. Soundings taken in January, 1909, showed that the cutting made in November and December had partially filled in and that the minimum depth, at extreme low water, was still 4½ feet.

During the year 1909-10, a channel through the bar, 80 feet in width at bottom and 10 feet in depth at extreme low water, was completed with the exception of about 300 feet at the outer end where on account of ledge rock, only 8 feet at extreme low water could be obtained, and continued inwards 660 feet and some improvements were made inside including: a cutting on the southern side of the channel 865 feet in length, 65 feet in average width, at bottom, and 4½ feet in average depth; a cutting on the northern side of the channel 200 feet in length, 25 feet in average width and 3½ feet in average depth, and a cutting between the main and north channels,

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near the inner end of proposed channel improvement, 150 feet in length, 50 feet in width, at bottom, and 6 feet in average depth. The average depth of the 50 foot cuttings, outside over the bar and inside, for a distance of 660 feet, was $4\frac{1}{2}$ feet.

The materials removed were: Outside, 41,817 cubic yards (including 9,273 cubic yards over-cast) of mud, sand and gravel, and 28,436 cubic yards (including 1,116 cubic yards over-cast) of soft mud.

LA HAVE RIVER.

La Have river, Lunenburg county, an important navigable river, about 50 miles west from Halifax. The head of navigation is 12 miles from the sea, at Bridgewater, an important town on the Halifax and South Western railway, 72 miles from Halifax, containing large saw-mills, exporting 30 to 40 million feet of lumber annually to the West Indies and South America.

During the year 1909-10, the W. J. Poupore Company, under contract, removed 23,282 cubic yards (at a cost of \$21,357.72) in deepening and widening the river channel, abreast of the lower wharfs of the town.

Work begun, August 12, and was completed September 23, 1909.

PETIT DE GRAT.

Petit de Grat inlet lies between Petit de Grat island and the southeast extremity of Isle Madam. It is $2\frac{1}{2}$ miles in length and has a sufficient depth for small vessels, but is obstructed by numerous rocks and reefs.

During the year 1909-10, Messrs. Beazley Bros., of Halifax, were engaged in improving the approaches to Jean's, Duff's and Comeau's wharfs. Dredging operations were in progress June 23 to August 6. The work performed included a cutting 300 feet in length, 135 feet in width and two feet in average depth, to from 10 to 12 feet at extreme low water, from the main channel to 'Jean's' wharf; a cutting 600 feet in length, 50 feet in average width and 2 feet in average depth, to from 13 to 14 feet at extreme low water, on the west side of the channel leading to 'Duff's' wharf, and a cutting about 500 feet in length, 65 feet in average width, and two feet in average depth, to from 11 to 14 feet at extreme low water, from the main channel to 'Comeau's' wharf.

Materials removed, 10,945 cubic yards of mud and $45\frac{1}{2}$ cubic yards of rock.

Spring tides rise 6 feet.

RED ISLANDS.

North Pond, in the district of Red Islands, Richmond county, is on the southwestern side of the Great Bras d'Or lake, about 21 miles northward from St. Peter's canal.

To facilitate the shipment of limestone by the Nova Scotia Steel & Coal Co., the opening of a channel, 60 feet in width at bottom and 15 feet in depth at low lake level, through the beach separating North Pond from the Great Bras d'Or lake, was undertaken by the dredge *Cape Breton*, in 1906-7. A channel 40 feet in width, at bottom, and 8 feet in depth, was made by over-casting with the intention of making the pond available as a harbour of refuge for the dredge. Shortly after the completion of the cutting, the dredge having been ordered to suspend operations and to proceed to North Sydney, the over-casting was washed into the channel, leaving the entrance in about the same condition as before dredging operations were undertaken.

During the year 1909-10, the opening of a channel, 60 feet in width with a depth of 15 feet at low lake level, was undertaken by the W. J. Poupore Co., Ltd. Operations were commenced June 3 and continued up to July 21, when the amount available became exhausted. During a westerly gale, a few days before the suspension of operations, the channel was partly filled in with sand, which had to be removed.

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The work performed included a cutting 530 feet in length, 75 feet in average width, at bottom, and 4 feet in average depth.

Materials removed, 16,758 cubic yards of sand and gravel.

High lake level is $1\frac{1}{2}$ feet above low lake level.

YARMOUTH.

Yarmouth, Yarmouth county. The town of Yarmouth, with a population of about 7,000, is situated at the extreme southwest end of Nova Scotia and, next to Halifax, is the most important shipping port in the province. In 1908-9, there entered inwards 624 vessels of an aggregate tonnage of 164,511, and outwards 639 vessels of 149,116 tons. Value of exports \$1,331,493, or imports \$613,684, and of goods entered for consumption \$617,025, while the duties collected amounted to \$54,835.04.

Yarmouth is the terminus of the Halifax and Southwestern railway, 248 miles from Halifax, and of the Dominion Atlantic railway, 216 miles from Halifax. It is also the sea terminus of the Dominion Atlantic Railway Company's line of steamers to Boston, daily in summer and semi-weekly in winter, which do a very large passenger business, the number of passengers for the 12 months being about 70,000.

In addition to local manufactures, there is annually shipped to foreign ports from 20,000,000 to 30,000,000 feet of lumber.

The shipping and trade of the port are seriously handicapped by the narrowness and crookedness of the harbour channel, and great improvements are necessary, feasible and fully warranted.

The following is a concise statement of the dredging done in the harbour since 1872:—

| | Cubic yards. | Cost. |
|--|-----------------|--------------------|
| Removed by departmental dredges from July 1, 1872, to April 1, 1909. | 658,117 | \$189,047 31 |
| Hand-digging in 1897-8. | 460 | 296 26 |
| In 1907-8, the Atlantic Wrecking Co.'s craft <i>Twilight</i> and <i>Coastguard</i> at \$50 per day removed a number of isolated boulders, quantity not measurable. | | 5,692 14 |
| In 1908-9, the Dominion Dredging Co., under contract, removed mud and sand. | 297,628 | 154,766 57 |
| And rock in large boulders. | 86.2 | 431 00 |
| In 1909-10, the Dominion Dredging Co., under contract, removed mud and sand. | 118,599 | 61,714 48 |
| Rock in boulders. | 16.3 | 81 50 |
| | <hr/> 1,074,804 | <hr/> \$412,029 26 |

The dredging in the past two years had been carried down to 18 feet below L.W.O.S.T.

Spring tides rise 13 feet.

Work carried on from April to November, 1909.

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STATEMENT of Expenditure and Quantities of Material removed by the different Contractors' Dredges at various locations in Nova Scotia, New Brunswick and Cape Breton, during the Fiscal Year ending November 30, 1909.

| Dredges. | Location. | Yards Removed. | Character of Soil. | Expendi- ture. | Cost per Yard. |
|-------------------------|---------------------|-------------------|--|-------------------|----------------------|
| Asp— | | | | 8 cts. | 8 cts. |
| J. S. Gregory..... | Ballast wharf, St. | 6,586'95 | Mud, clay and coal..... | 2,124 22 | 0 32 $\frac{1}{2}$ |
| Bruiser— | John harbour. | | | | |
| Cape Breton Dg. Co.... | Fourchie, C. B..... | 71,696'68 | Mud, sand, gravel, boul- ders and rock. | 35,161 21 | 0 49 $\frac{1}{2}$ |
| Cynthia— | | | | | |
| Maritime Dg. & Con. Co. | Sand Point..... | 33,124'3 | Mud, clay and hardpan.. | 15,102 04 | 0 45 $\frac{1}{2}$ |
| | Beacon Bar..... | 266,878'2 | Gravel and rock..... | 106,317 36 | 0 39 $\frac{1}{2}$ |
| | | 300,002'5 | | | |
| Delver No. 1— | | | | | |
| Dominion Dg. Co..... | Cheticamp Harbour. | 49,443 | Mud, sand and gravel... | 34,767 45 | 0 70 $\frac{1}{2}$ |
| Grey Loggie— | | | | | |
| A. & R. Loggie..... | Loggieville..... | 30,546 | Mud and clay..... | 10,847 22 | 0 35 $\frac{1}{2}$ |
| | Campbellton..... | 8,246 | Mud and clay..... | 5,000 10 | 0 60 $\frac{1}{2}$ |
| | | 38,792 | | | |
| Hayward— | | | | | |
| A. & R. Loggie..... | Caraquet..... | 48,772 | Mud, clay, sand..... | 20,406 50 | 0 41 $\frac{1}{2}$ |
| | Bathurst..... | 75,797 | Mud, clay, sand..... | 31,483 27 | 0 41 $\frac{1}{2}$ |
| | | 124,569 | | | |
| Iroquois— | | | | | |
| Maritime Dg. & Con. Co. | Oromocto Shoals.... | 56,380'03 | Sand, clay, mud, gravel.. | 28,546 95 | 0 52 $\frac{1}{2}$ |
| | Beacon Bar..... | 42,456'1 | Sand, gravel and clay... | 17,427 13 | 0 41 |
| | | 98 836'13 | | | |
| King Edward— | | | | | |
| W. J. Poupore Co..... | La Have River..... | 23,184 | Stone and gravel..... | 21,483 22 | 0 92 $\frac{1}{2}$ |
| No. 2— | | | | | |
| Beazly Bros..... | Petit de Grat..... | 12,429 | Hardpan, mud and rock. | 14,175 88 | 1 14 |
| No. 4— | | | | | |
| Dominion Dg. Co..... | Yarmouth..... | 118,648'6 | Mud, stones, gravel, rock. | 61,426 37 | 0 51 $\frac{1}{2}$ |
| Prince Guy— | | | | | |
| W. J. Poupore Co..... | Red Islands..... | 16,758 | Sand and gravel..... | 8,503 50 | 0 50 $\frac{1}{2}$ |
| Prince Louis— | | | | | |
| W. J. Poupore Co..... | Miramichi Bay..... | 65,129 | Mud, hardpan and sand.. | 39,397 18 | 0 60 $\frac{1}{2}$ |
| Peter England— | | | | | |
| P. England..... | South W. Miramichi | 13,171 | Sand..... | 4,783 73 | 0 36 $\frac{1}{2}$ |
| Reliable— | | | | | |
| A. & R. Loggie..... | Dalhousie..... | 62,725 | Hardpan..... | 31,662 13 | 0 50 $\frac{1}{2}$ |
| Saugus— | | | | | |
| Maritime Dg. & Con. Co. | Digby..... | 41,390 | Mud, hardpan, logs..... | 20,887 50 | 0 50 $\frac{1}{2}$ |
| | Beacon Bar..... | 73,634'7 | Mud, sand, gravel..... | 30,048 74 | 0 40 $\frac{1}{2}$ |
| | | 115,024'7 | | | |

1 GEORGE V., A. 1911

CLASSIFICATION of Disbursements during Fiscal Year 1909-10.
DREDGE 'CANADA.'

| Items. | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Grand Totals. |
|------------------------|----------|----------|----------|----------|----------|------------|----------|-----------|-----------|----------|-----------|----------|---------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages | 543 09 | 693 34 | 637 00 | 696 66 | 715 61 | 745 81 | 772 24 | 749 13 | 835 02 | 671 06 | 677 00 | 645 36 | 8,382 52 |
| Coal | 122 88 | 290 28 | 422 98 | 94 87 | 374 00 | 243 36 | 246 11 | 238 25 | 187 50 | 194 43 | 67 86 | 73 56 | 2,466 03 |
| Provisions | 151 88 | 179 08 | 166 40 | 226 64 | 170 69 | 169 49 | 182 27 | 298 36 | 205 75 | 165 84 | 123 77 | 184 92 | 2,135 09 |
| Stores | 35 85 | 6 20 | ..... | 409 20 | 122 38 | 66 50 | 121 74 | 300 14 | 166 11 | 168 99 | 545 06 | 236 29 | 2,113 46 |
| Equipment | 29 66 | 22 42 | 35 52 | 1 50 | 104 86 | 168 67 | 445 05 | 3 75 | ..... | ..... | 575 45 | 684 67 | 2,011 55 |
| Water ..... | ..... | ..... | ..... | 37 50 | 33 00 | 34 50 | 37 50 | 23 00 | 24 50 | 13 00 | ..... | ..... | 263 00 |
| Repairs | 16 18 | 5 35 | 0 75 | 77 54 | 38 48 | 198 64 | 665 96 | 547 50 | 60 00 | 231 62 | 1,193 07 | 826 21 | 3,861 24 |
| Towage | 308 00 | 750 00 | 840 00 | 690 00 | 780 00 | 780 00 | 780 00 | 780 00 | 810 00 | 1,067 50 | 1,453 50 | 1,320 00 | 10,289 00 |
| Wharfage | 23 50 | ..... | 30 00 | ..... | ..... | ..... | ..... | ..... | ..... | 1 90 | 9 81 | 13 00 | 78 21 |
| Contingencies | 13 49 | 7 13 | 66 78 | 10 75 | 32 27 | 34 95 | 87 98 | 217 95 | 329 67 | 685 90 | 552 10 | 500 17 | 2,539 14 |
| Totals | 1,245 08 | 1,863 80 | 2,199 43 | 2,244 66 | 2,371 29 | 2,381 92 | 3,338 79 | 3,068 08 | 2,618 55 | 3,675 84 | 5,197 62 | 4,484 18 | 34,089 24 |
| Working expenses | 1,228 90 | 1,858 45 | 2,198 68 | 2,167 12 | 2,332 81 | 2,183 28 | 2,672 89 | 2,520 58 | 2,558 55 | 2,844 22 | 4,604 55 | 3,657 97 | 30,228 00 |
| Repairs ordinary | 16 18 | 5 35 | 0 75 | 77 54 | 38 48 | 198 64 | 665 96 | 547 50 | 60 00 | Nil. | Nil. | Nil. | 1,610 34 |
| " extraordinary | Nil. | Nil. | Nil. | Nil. | Nil. | Nil. | Nil. | Nil. | Nil. | 231 62 | 1,965 07 | 826 21 | 2,250 90 |
| Totals | 1,245 08 | 1,863 80 | 2,199 43 | 2,244 66 | 2,371 29 | 2,381 92 | 3,338 79 | 3,068 08 | 2,618 55 | 3,675 84 | 5,197 62 | 4,484 18 | 34,089 24 |

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Classification of Disbursements during Fiscal Year 1909-10.

DREDGE "GEORGE MCKENZIE."

| Items. | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Grand Totals. |
|-----------------------|----------|---------|----------|---------|---------|------------|----------|-----------|-----------|----------|-----------|---------|---------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages..... | 432 55 | 464 00 | 490 54 | 551 87 | 480 12 | 459 59 | | 465 00 | 404 26 | 280 00 | 280 00 | 280 00 | 4,567 43 |
| Coal..... | | 52 00 | | | 319 50 | | | 57 19 | 27 60 | | | | 456 29 |
| Provisions..... | 84 20 | | 302 69 | 137 15 | 93 11 | 133 37 | | 81 89 | 85 35 | 50 50 | 44 75 | 48 04 | 1,061 45 |
| Stores..... | 31 80 | 129 31 | | | 11 98 | 60 30 | | 37 57 | | 14 66 | | | 285 62 |
| Equipment..... | | | 768 70 | 10 19 | | | | | 10 00 | | | | 787 89 |
| Water..... | | | | 8 67 | 4 33 | 6 50 | | | | | | | 29 50 |
| Repairs..... | 2,929 13 | 3 86 | | 26 35 | | 6 35 | | 307 66 | 4 23 | 499 81 | 239 37 | 59 73 | 4,077 09 |
| Contingencies..... | 23 88 | 13 00 | 44 79 | | 30 00 | | | 7 21 | | 21 55 | 14 80 | | 155 23 |
| Totals..... | 3,501 56 | 652 17 | 1,006 72 | 743 83 | 939 04 | 666 11 | | 956 52 | 531 44 | 866 92 | 578 92 | 387 77 | 11,441 00 |
| Working expenses..... | 572 43 | 658 31 | 1,006 72 | 716 88 | 939 04 | 659 76 | | 648 86 | 527 21 | 367 11 | 339 55 | 398 04 | 7,363 91 |
| Repairs ordinary..... | Nil | 3 86 | Nil | 26 55 | Nil | 6 35 | | 307 66 | 4 23 | Nil | Nil | Nil | 349 65 |
| " extraordinary..... | 2,929 13 | Nil | Nil | Nil | Nil | Nil | | Nil | Nil | 499 81 | 239 37 | 367 73 | 3,728 65 |
| Totals..... | 3,501 56 | 652 17 | 1,006 72 | 743 83 | 939 04 | 666 11 | | 956 52 | 531 44 | 866 92 | 578 92 | 387 77 | 11,441 00 |

Dredge working at Port Elgin, N.B.

1 GEORGE V., A. 1911

CLASSIFICATION of Disbursements during Fiscal Year, 1909-10.
DREDGE 'NORTHUMBERLAND.'

| Items. | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Grand total. |
|------------------------|----------|----------|----------|----------|----------|------------|----------|-----------|-----------|----------|-----------|----------|--------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages..... | 512 55 | 810 18 | 817 98 | 840 00 | 845 26 | 845 26 | 880 00 | 880 00 | 880 00 | 589 81 | 590 00 | 500 00 | 8,901 04 |
| Coal..... | ..... | 648 08 | 994 75 | 824 55 | 837 20 | 1,038 45 | 629 05 | 629 05 | 277 15 | ..... | ..... | ..... | 5,878 28 |
| Provisions..... | 313 94 | 218 07 | 318 92 | 345 54 | 349 62 | 284 27 | 306 34 | 303 38 | 161 33 | 84 86 | 133 92 | 218 03 | 3,098 22 |
| Stores..... | ..... | 361 06 | ..... | 140 20 | 290 35 | 100 61 | 55 33 | 32 59 | 89 04 | 153 02 | 159 17 | 301 31 | 1,682 68 |
| Equipment..... | 601 70 | ..... | 1,741 65 | 587 88 | 690 00 | ..... | 36 95 | 1,000 00 | ..... | 295 00 | ..... | 90 00 | 4,952 58 |
| Water..... | 100 00 | ..... | 219 37 | 210 00 | 160 50 | 177 75 | 123 75 | 191 25 | 39 00 | ..... | ..... | ..... | 1,221 62 |
| Repairs..... | 2,055 08 | 1,455 39 | 248 98 | ..... | 30 90 | ..... | 107 21 | 400 72 | 46 30 | 28 22 | 1,014 76 | 1,884 21 | 7,325 77 |
| Towage..... | 18 00 | 45 00 | 66 00 | ..... | ..... | ..... | ..... | ..... | 45 00 | ..... | ..... | ..... | 174 00 |
| Wharfage..... | 15 00 | 169 00 | 200 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 384 00 |
| Contingencies..... | 64 75 | 24 61 | 48 58 | 20 83 | 20 38 | 40 44 | 33 43 | 15 83 | 16 86 | 41 56 | 96 57 | 42 30 | 466 14 |
| Totals..... | 3,681 02 | 3,731 39 | 4,655 63 | 2,969 00 | 3,224 21 | 2,486 78 | 2,232 06 | 3,512 82 | 1,548 68 | 1,102 47 | 1,904 42 | 3,035 85 | 34,084 33 |
| Working expenses..... | 1,625 94 | 2,276 00 | 4,406 65 | 2,969 00 | 3,143 31 | 2,486 78 | 2,124 85 | 3,032 10 | 1,568 38 | 1,074 25 | 889 66 | 1,151 64 | 26,758 56 |
| Repairs, ordinary..... | 243 79 | Nil. | 248 98 | Nil. | 30 90 | Nil. | 107 21 | Nil. | 40 30 | 28 22 | Nil. | Nil. | 699 40 |
| " extraordinary..... | 1,811 29 | 1,455 39 | Nil. | Nil. | Nil. | Nil. | Nil. | 460 72 | Nil. | Nil. | 1,014 76 | 1,884 21 | 6,626 37 |
| Totals..... | 3,681 02 | 3,731 39 | 4,655 63 | 2,969 00 | 3,224 21 | 2,486 78 | 2,232 06 | 3,512 82 | 1,548 68 | 1,102 47 | 1,904 42 | 3,035 85 | 34,084 33 |

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CLASSIFICATION of Disbursements during Fiscal Year, 1909-10.
DREDGE 'CAPE BRETON.'

| Items. | April. | | May. | | June. | | July. | | August. | | September. | | October. | | November. | | December. | | January. | | February. | | March. | | Grand total. | | |
|------------------------|--------|-------|-------|-------|-------|-------|-------|-------|---------|-------|------------|-------|----------|-------|-----------|-------|-----------|-------|----------|-------|-----------|-------|--------|-------|--------------|------|----|
| | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | |
| Wages..... | 555 | 90 | 502 | 88 | 510 | 00 | 510 | 00 | 646 | 50 | 546 | 01 | 550 | 00 | 550 | 00 | 560 | 00 | 340 | 93 | 370 | 00 | 390 | 37 | 6,032 | 59 | |
| Coal..... | 345 | 27 | 220 | 01 | 113 | 71 | 298 | 00 | 226 | 20 | 273 | 00 | 134 | 52 | 147 | 41 | 560 | 00 | 46 | 64 | 394 | 50 | 394 | 50 | 1,178 | 34 | |
| Provisions..... | 480 | 81 | 24 | 40 | 12 | 60 | 288 | 23 | 220 | 24 | 214 | 63 | 22 | 22 | ..... | ..... | 152 | 54 | 120 | 09 | ..... | ..... | 105 | 00 | 2,111 | 05 | |
| Equipment..... | 22 | 75 | 357 | 35 | 765 | 53 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 477 | 38 | 536 | 80 | |
| Wages..... | 385 | 18 | 2,994 | 52 | ..... | ..... | 30 | 00 | 47 | 95 | ..... | ..... | 268 | 89 | 122 | 07 | ..... | ..... | 370 | 43 | ..... | ..... | ..... | ..... | 2,029 | 03 | |
| Repairs..... | 40 | 00 | 120 | 00 | 660 | 00 | 6,178 | 64 | 1,460 | 00 | 1,428 | 00 | 1,750 | 00 | 1,946 | 00 | 1,085 | 13 | 410 | 54 | ..... | ..... | 53 | 67 | 10,553 | 61 | |
| Pilotage..... | 29 | 85 | 3 | 19 | 2 | 50 | 25 | 50 | 87 | 65 | 6 | 13 | 97 | 40 | 10 | 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 5 | 00 | |
| Towage..... | ..... | ..... | ..... | ..... | ..... | ..... | 16 | 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 11,038 | 71 | |
| Wharfage..... | ..... | ..... | ..... | ..... | ..... | ..... | 8 | 75 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 82 | 50 | |
| Contingencies..... | | | | | | | | | | | | | | | | | | | | | | | | | | 387 | 05 |
| Totals..... | 2,059 | 77 | 4,218 | 95 | 2,064 | 34 | 9,334 | 71 | 2,688 | 54 | 2,407 | 77 | 2,763 | 03 | 2,775 | 48 | 2,447 | 96 | 1,254 | 34 | 466 | 03 | 1,515 | 06 | 34,055 | 98 | |
| Working expenses..... | 1,474 | 59 | 1,224 | 43 | 2,064 | 34 | 3,156 | 07 | 2,688 | 54 | 2,407 | 77 | 2,554 | 14 | 2,053 | 41 | 2,447 | 96 | 843 | 70 | 466 | 03 | 1,461 | 39 | 23,502 | 37 | |
| Repairs, ordinary..... | Nil. | ..... | Nil. | ..... | Nil. | ..... | Nil. | ..... | Nil. | ..... | Nil. | ..... | Nil. | ..... | Nil. | ..... | Nil. | ..... | Nil. | ..... | Nil. | ..... | Nil. | ..... | 330 | 96 | |
| " extraordinary..... | 585 | 18 | 2,994 | 52 | Nil. | ..... | 6,178 | 64 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 410 | 64 | ..... | ..... | 53 | 67 | 10,222 | 05 | |
| Totals..... | 2,059 | 77 | 4,218 | 95 | 2,064 | 34 | 9,334 | 71 | 2,688 | 54 | 2,407 | 77 | 2,763 | 03 | 2,775 | 48 | 2,447 | 96 | 1,254 | 34 | 466 | 03 | 1,515 | 06 | 34,055 | 98 | |

1 GEORGE V., A. 1911

CLASSIFICATION OF Disbursements during Fiscal Year 1909-10.

TUG 'RONA.'

| Items. | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Grand Totals. |
|------------------------|---------|---------|---------|---------|---------|------------|---------------------------------|-----------|-----------|----------|-----------|---------|---------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages..... | 224 58 | 223 34 | 235 00 | 319 62 | 255 00 | 255 00 | 255 00 | 255 00 | 255 00 | 205 00 | 205 00 | 205 00 | 2,637 54 |
| Coal..... | 95 67 | 32 50 | | | 19 00 | 19 00 | | 57 00 | 88 13 | | | 22 75 | 245 05 |
| Provisions..... | 74 08 | 72 51 | 95 49 | 127 00 | 101 63 | 95 38 | | 50 26 | 64 41 | | | | 680 10 |
| Stores..... | | | | | 26 00 | | | | | | | | 161 98 |
| Equipment..... | | | | | | | | | | 8 24 | 45 70 | 36 15 | 138 69 |
| Water..... | | | | 17 33 | | | | | | 88 25 | 3 70 | | 21 03 |
| Repairs..... | | 160 20 | | 0 90 | | | | | | | | 19 06 | 268 41 |
| Pilotage..... | | | | | | | | | 10 00 | | | | 10 00 |
| Contingencies..... | 15 36 | | | 3 80 | 1 64 | 2 73 | | | | | | 3 98 | 27 51 |
| Totals..... | 388 29 | 488 55 | 350 49 | 468 65 | 383 67 | 372 11 | Tug working at Port Elgin, N.E. | | | | | | 4,210 31 |
| Working expenses..... | 388 29 | 328 35 | 350 49 | 467 75 | 383 67 | 372 11 | | 362 20 | 417 54 | 213 24 | 254 40 | 403 86 | 3,911 90 |
| Repairs, ordinary..... | Nil. | Nil. | Nil. | 0 90 | Nil. | Nil. | | Nil. | Nil. | Nil. | Nil. | Nil. | 0 90 |
| " extraordinary..... | Nil. | 160 20 | Nil. | Nil. | Nil. | Nil. | | Nil. | Nil. | 88 25 | Nil. | 19 06 | 267 51 |
| Totals..... | 388 29 | 488 55 | 350 49 | 468 65 | 383 67 | 372 11 | | 362 20 | 417 54 | 301 49 | 254 40 | 422 92 | 4,210 31 |

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CLASSIFICATION and Quantities of Material removed by Dredges in Nova Scotia during the Year ended March 31, 1910.
DREDGE 'CANADA.'

| Description of Material Dredged. | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Grand Totals. |
|-------------------------------------|--------|--------|--------|--------|---------|------------|-------------|--------------|--------------|-------------|--------------|--------------|------------------|
| | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. |
| Sand | 90 | | 2,120 | 12,500 | 600 | 1,800 | 5,360 | | | | | | 22,470 |
| Sawdust and mud .. | 2,150 | 11,600 | 6,100 | | | | | | | | | | 19,850 |
| Mud | | | 2,500 | | | | 3,000 | 2,600 | 200 | | | | 2,700 |
| Sand and mud | | | | | 18,460 | 14,850 | | 500 | | | | | 33,810 |
| Mud and rock | | | | | | | | | | | | | 500 |
| | 2,240 | 11,600 | 10,720 | 12,500 | 19,460 | 16,650 | 8,360 | 3,100 | 200 | | | | 84,830 |
| Heavy rock | | | | | | | | | | | | | |
| | | | | | | | Tons. 15 | Tons. 149 | Tons. 138 | Tons. 20 | Tons. 265 | Tons. 210 | Tons. 737 |

1 GEORGE V., A. 1911

CLASSIFICATION and Quantities of material removed by Dredges in Nova Scotia during the year ended March 31, 1910.
DREDGE 'GEORGE MCKENZIE.'

| Description of Material Dredged. | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Grand Totals. |
|----------------------------------|--------|------|-------|-------|---------|------------|----------|-----------|-----------|----------|-----------|--------|---------------|
| | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. |
| Mud and rock... | 112½ | | | | | | | | | | | | 112½ |
| Mud and sand... | 112½ | | | | | | | | | | | | 112½ |
| Boulders & hard clay. | 67½ | | | | | | | | | | | | 67½ |
| Boulders and coarse stone. | | | 2,970 | | 1,800 | | | | | | | | 4,770 |
| Boulders and gravel. | | | 1,800 | | 900 | | 360 | | | | | | 8,280 |
| Logs and sand. | | | 630 | | | | | | | | | | 630 |
| Sand and gravel. | | | 495 | | | 1,440 | | | | | | | 2,520 |
| Boulders. | | | | | | | | | | | | | 5,595 |
| Sand. | | | | | 2,635 | | | | | | | | 405 |
| Mud. | | | | | | | 405 | 5,750 | | | | | 5,750 |
| | Nil. | 292½ | 5,895 | 8,655 | 5,445 | 2,205 | | 5,750 | Nil. | Nil. | Nil. | Nil. | 28,242½ |

DREDGE 'NORTHUMBERLAND.'

| | | | | | | | | | | | | | |
|------------------------|------|--------|--------|---------|---------|--------|--------|--------|------|------|------|------|---------|
| Stone and mud. | | 27,693 | 20,137 | 85,764 | 55,500 | 60,892 | 82,925 | 85,876 | | | | | 47,830 |
| Clay. | | | 29,107 | | | | | | | | | | 401,064 |
| Clay and sand. | | | 19,390 | | | | | | | | | | 19,390 |
| Oyster shells and clay | | | 13,002 | 29,841 | 43,034 | 35,652 | | | | | | | 121,529 |
| | Nil. | 27,693 | 81,636 | 112,605 | 102,534 | 96,544 | 82,925 | 85,876 | Nil. | Nil. | Nil. | Nil. | 589,813 |

DREDGE 'CAPE BRETON.'

| | | | | | | | | | | | | | |
|----------------------|------|------|--------|--------|--------|--------|--------|--------|-------|------|------|------|--------|
| Rock, coal and mud. | | | 5,670 | | | | | | | | | | 5,670 |
| Rock, clay and mud. | | | 7,455 | 1,050 | | | | | | | | | 8,505 |
| Ballast and sand. | | | | 5,880 | | | | | | | | | 5,880 |
| Stone and red clay. | | | | 5,775 | | | | | | | | | 5,775 |
| Fine sand. | | | | 25,830 | | 1,680 | | | | | | | 27,510 |
| Ballast and mud. | | | | 4,410 | | | | | | | | | 4,410 |
| Stone. | | | | | | 1,050 | | | | | | | 1,050 |
| Stone and boulders. | | | | | | 12,390 | 13,650 | 10,080 | 2,310 | | | | 38,430 |
| Stone and blue clay. | | | | | | 210 | | | | | | | 210 |
| | Nil. | Nil. | 13,125 | 12,705 | 30,240 | 15,330 | 13,650 | 10,080 | 2,310 | Nil. | Nil. | Nil. | 97,440 |

PROVINCE OF NEW BRUNSWICK.

Campbellton, Restigouche county, N.B. (government wharf).
Clifton, Kings county, N.B.
Hampton, Kings county, N.B.
Jenkin's cove wharf, Kings county, N.B.
Leonardville, Charlotte county, N.B.
Port Elgin, Westmorland county, N.B.
St. Andrews, Charlotte county, N.B.
Shamper's, Kings county, N.B.
St. John Harbour channel.
St. John harbour (winter port wharfs).
Traverse, Restigouche county, N.B.
Wanamaker's, Kings county, N.B.

PROVINCE OF PRINCE EDWARD ISLAND.

Asylum wharf, Queens county, P. E. Island.
Georgetown, Kings county, P. E. Island.
Marine wharf, Queens county, P. E. Island.
Navigation Company's wharf, Queens county, P. E. Island.
Peake's and Queen's docks, Queens county, P. E. Island.
Pownal, Queens county, P. E. Island.
Pinette, Queens county, P. E. Island.
Souris, Kings county, P. E. Island.
Summerside, Prince county, P. E. Island.
Vernon river, Queens county, P. E. Island.

PROVINCE OF NEW BRUNSWICK.**BATHURST.**

Between May 10 and June 17, and between August 9 and November 20, of the past season, dredging was performed in Bathurst harbour under contract with Messrs. A. and R. Loggie, by the dredge *Hayward*.

38,392 cubic yards of sand, mud and hard sticky clay were removed in taking off a sharp bend in the channel in the approach to the public wharf and increasing the depth there and in the berth at the public wharf to 8 feet at low water ordinary spring tides.

30,264 cubic yards of sand, mud and clay were removed in giving a passage for logs, &c., about 45 to 60 feet wide with 3½ to 6 feet at low water in front of the Bathurst Lumber Company's mill.

4,363 cubic yards of sand and mud were removed from the ballast bar and 2,778 of sand and mud at the Tetagouche bar in giving a depth of 9 feet for a width of about 45 feet at these points in the main channel through Bathurst harbour.

CAMPBELLTON, RESTIGOUCHE COUNTY, AT GOVERNMENT WHARF.

The government dredge *St. Lawrence* was employed during the season in deepening the shoal at the Traverse, about 4,000 feet long, to 16 feet at low water ordinary

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spring tides, and in widening and deepening the berths about the wharfs to about 18 to 22 feet at low water. This work was continued close to the wharfs, and to extend a berth for schooners with 12 feet at low water on the inside, which could not be reached by the *St. Lawrence*, by the dredge *Gray Loggie*, belonging to Messrs. A. & R. Loggie, which removed a total of 8,246 cubic yards.

Work at the government wharf commenced on June 5, 1909, and continued to July 10; also from October 11 to November 9, 1909, removing in all 10,195 cubic yards, at a cost of \$10,325.35, or \$1.01-28 per cubic yard. Much time was lost, the spoil being mixed with old logs, roots, &c.

CARAQUET HARBOUR.

Dredging was begun and was in progress by the dredge *Hayward*, under contract with Messrs. A. and R. Loggie, between June 23 and August 4, across the shoal in Caraquet harbour, about $3\frac{1}{2}$ miles below the deep water wharf. The least depth on the shoal is 15-2 feet at low water ordinary spring tides and the total length between the 20-foot contours was 4,000 feet.

The dredge made a cut to a depth of about 20 feet at low water ordinary spring tides, 1,100 feet long and 75 to 140 feet wide.

48,772 cubic yards of sand and mud were removed.

CHATHAM.

Dredging was in progress between April 28 and May 19, 1909, in the boom belonging to the J. B. Snowball Co., Ltd., at their Chatbam sawmill, by the *Prince Louis* of the W. J. Poupore Dredging Co.

Soundings were taken in the boom, before the dredging and again in September, from which the calculations show that 8,726 cubic yards measured in situ or 10,906 cubic yards barge measurement of pulp, mud, old logs, &c., were removed.

The Snowball Company claim that as mill owners are prevented by the government from discharging sawdust in the rivers, the government should also have taken steps to prevent the filling of the boom and shoaling of the river by the discharge from the pulp mill, and on this account chiefly they ask that the government assume the cost of this dredging, which at 20 cents per cubic yard would be \$2,181.60.

CLIFTON, KINGS COUNTY.

On June 25, 1909, the dredge *New Brunswick* moved stone from pier and placed pier in position at Clifton, Kings county, removing 100 yards of clay, &c., at a cost of \$81.67, or 81-67 cents per cubic yard.

DALHOUSIE.

Between July 12 and November 2, 1909, the A. & R. Loggie dredge *Reliable*, afterwards named *Invader* worked in the ferry basin at Dalhousie, dredging about the pierhead of the new ferry wharf to form berths for schooners to give 13 feet at low water, and along the western side of the basin, next to the Dalhousie Lumber Company's wharf; a berth for deep water vessels to be 75 feet wide, 600 feet long, and 20 feet deep at low water.

The material removed during the season amounted to 62,725 cubic yards of mud and clay.

GASPEREAU RIVER.

Dredging was in progress between August 17 and October 29, 1908, in the estuary of the GasperEAU river, under contract with the Maritime Dredging and Construction

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Company, and a cut was made 1,650 feet long with a mean width of about 70 feet between the 6-foot contours.

The dredging was continued during the fiscal year 1909-10 by the government dredge *Geo. McKenzie*, which arrived early in October, 1909, and left for Pictou on October 28. The cut was extended 500 feet with an average depth of 9 feet at low water and width of 100 feet.

HAMPTON, KINGS COUNTY.

The dredge *New Brunswick* commenced work at Hampton, Kings county, on April 20 and continued until May 19, returned May 23 and worked until June 4, removing 24,260 cubic yards material, at a cost of \$2,960.15, or 12.20 cents per cubic yard.

JENKIN'S COVE WHARF, KING'S COUNTY.

The dredge *New Brunswick* worked at Jenkin's Cove wharf, Kings county, from October 24 to November 19, 1909, removing 13,870 cubic yards at a cost of \$2,288.25, or 16.49 cents per cubic yard.

LEONARDVILLE.

At Leonardville, Charlotte county, a cove of Deer island, a channel 520 feet long and 60 feet wide was excavated by the dredge *New Dominion* to the site of the proposed wharf, where a basin 170 by 55 feet was also made, all to 9 feet at low water. Two hundred yards to the northeast of the wharf, a shoal 525 feet in extreme length and 115 feet in extreme breadth, locally called the 'sand bar,' was also removed to the same depth by the dredge *New Dominion*.

From the channel to the wharf and basin, 11,275 cubic yards of mud, sand and gravel were removed, and from the sand bar, 10,988 yards of mud and gravel were excavated at a cost of \$4,009.48, or 18.01 cents per cubic yard.

LOGGIEVILLE.

Dredging by the *Gray Loggie* was in progress at Loggieville between June 28 and September 2, 1909, in continuation of last year's contract with Messrs. A. & R. Loggie. 30,546 cubic yards of mud were removed from the front of and approaches to the Loggieville wharfs in levelling the shallow spots left last year and giving a depth of 15 to 17 feet at low water ordinary spring tides.

MIRAMICHI BAY.

The dredging of the ship channel of Miramichi bay under contract with the W. J. Poupore Dredging Company was begun on June 5, 1909, by the dredge *Prince Louis*.

Between June 5 and 9, the dredge worked on the Grandoon flats. Between June 10 and July 7, the dredge was fitting up for and attempting to dredge on the Horse-shoe, but was able to dig only 22 hours in that time, removing 1,210 cubic yards, on account of the rough weather and exposed locality, the pontoon type of dredge being unsuitable for the work.

Between July 8 and October 23, dredging was in progress on the Grandoon flats. The dredging began in 18 feet at low water towards the lower end of the shoal, working upstream a distance of about 1,500 feet. The dredge was then moved to the upper end of the shoal starting in about 18 feet of water and dredging down stream for a distance of 3,950 feet. There is still a length of about 950 feet between the two cuts where the depth is about 15½ feet at L.W.O.S.T. The width of the cuts was about 50 to 60 feet and depth 20 to 22 feet at L.W.S.T.

The expenditure for the season, including inspection, was \$39,429.98.

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PORT ELGIN, WESTMORLAND COUNTY.

The dredge *Geo. McKenzie* was ordered from Nova Scotia to perform dredging at Port Elgin, Westmorland county, and remained there from October 8 to 26, 1909, removing during that time 3,465 cubic yards material at a cost of \$1,851.76, or 53.13 cents per cubic yard. To do good work the dredge should go there earlier in the season.

ST. ANDREWS.

St. Andrews, the county town of Charlotte, is a terminus of a branch of the Canadian Pacific railway, and lies, by water, 50 miles west of St. John. The town (lately incorporated) is situated at the mouth of the St. Croix, on the point of a peninsula, stretching into Passamaquoddy bay, a deep sheltered inlet of the Bay of Fundy, navigable for vessels of the deepest draught at all seasons of the year. In the summer months, St. Andrews is a favourite watering place, frequented by tourists and yachtsmen, and also by fishermen. About 15,000 tons of coal, brought in barges 13½ feet in draught, are landed annually at St. Andrews for the use of the Canadian Pacific railway.

The harbour is formed by Navy Island, a mile in length, lying parallel to the coast, and by the bars trending at each end towards the shore from the island.

Flood tide, which in spring rises 25 feet, flows into the harbour through the east and west channels thus formed, while the converse happens at the ebb. Between the lines of low water mark, the harbour is about $\frac{2}{3}$ of a mile long and $\frac{1}{2}$ of a mile broad.

During 1909-10, a part of the shoal called the Middle ground, 800 feet in length and 450 feet in extreme breadth was removed to 12 feet below low water. A cut of the same depth, 650 feet long and about 40 feet wide was also made to the natural basin. 76,492 cubic yards of clay, sand and shells were removed at a cost of \$12,497.06, or 16.34 cents per cubic yard.

SHAMPER'S, KINGS COUNTY.

From July 1 to October 23, 1909, 76,980 cubic yards mud, clay, stone and gravel were removed at Shamper's wharf, Kings county, at a cost of \$9,559.88, or 12.41 cents per cubic yard.

ST. JOHN HARBOUR CHANNEL.

During the months of April, May and June, 1909, the dredge *W. S. Fielding* was undergoing extensive repairs to buckets and machinery at St. John. From July 2 to September 8, and again from November 12, 1909, to February 3, 1910, the dredge was engaged improving the width of channel at entrance to St. John harbour to 400 feet, and the depth to 30 feet L.W.S.T., removing 360,375 cubic yards stone, gravel, mud and sand at a cost of \$58,497.92, or 16.23 cents per cubic yard.

ST. JOHN HARBOUR (WINTER PORT WHARFS).

From September 9 to October 20, 1909, the dredge *W. S. Fielding* was employed in dredging at the winter port berths, West St. John, removing 43,200 cubic yards rocks, boulders and hard clay at a cost of \$16,863.64, or 39.27 cents per cubic yard.

ST. LOUIS RIVER.

The St. Louis river or Kouchibouguacis, Kent county, enters the Gulf of St. Lawrence, 7 miles north of the entrance to Richibucto harbour. The inhabitants of the parish, numbering over 2,000, live almost entirely along the river within 17 miles of the mouth, and are occupied chiefly in farming.

The St. Louis Agricultural Society purchased, about 7 years ago at a cost of \$1,600, an orange peel dredge with which a large quantity of mud, about 7,500 tons in

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1904, is dug each year from the lower part of the river and used as a fertilizer. This is taken in scows to the various farms, but the old and long continued practice of dumping sawdust and other mill refuse into the river when lumbering was a flourishing industry, has practically filled the channel over about $2\frac{1}{2}$ miles of what should be the navigable section, and much of the mud must now be hauled by teams the extra distance.

During the past season, \$1,000 was appropriated for the improvement of the channel. The agricultural society's dredge was hired for \$13 per day, including cost of repairs, gasoline and oil, and the services of an engineer, and the work was done by day labour. 3,166 cubic yards of mud, slabs, sticks, &c., were removed over a length of 4,615 feet in digging a channel about 40 feet wide and 4 feet deep, and a number of trees, logs, &c. were hauled out with teams. These were used together with brush, stone and dredged material, in making breastworks and banks across blind channels, &c., to keep the current in the new cut.

685 lineal feet of breastworks, 6 to 8 feet wide, were constructed of slabs and logs bolted together and covered with brush and stone, reaching generally to high water level, and 1,610 feet of rough banks were made of the sticks and other dredged material.

The work extended over a distance of 8,100 feet. There remains a distance of 5,060 feet to deep water over which about 4,060 lineal feet will require more or less dredging.

Work was in progress August 4 to 7, August 11 to September 22, October 11 to 16, and from October 26 to 30.

The expenditure for the fiscal year was \$999.95.

The total expenditure to date has been \$4,132.42, of which \$3,132.47 was expended on the St. Louis public wharf.

SOUTHWEST MIRAMICHI.

Between June 9 and August 12, dredging was in progress by the dredge *Peter England*, under contract with Mr. Peter England, at a shoal about $\frac{3}{4}$ of a mile below Millerton and about $1\frac{1}{2}$ miles above the shoal which was dredged last year. The shoal was about 1,000 feet long with a least depth of 5-2 feet; 10,690 cubic yards of sand were removed, increasing the depth to 7 feet in a channel 60 feet wide.

Between August 12 and 24, the dredge worked at the lower shoal widening the cut towards the lower end and where it was not completed last year; 1,874 cubic yards of sand were removed here.

In addition, 116 pieces of logs, stumps and trees from 12 to 35 feet long, which were a danger to navigation and could collect ridges of sand on the bottom, were removed from the cuts.

The expenditure for the season, including inspection, was \$4,813.72.

TABUSINTAC.

The coast of Northumberland county between Tabusintac river and the Miramichi is skirted by a series of low sandy islands inside which is a passage used in towing about 8,000,000 to 15,000,000 feet B.M. of logs annually to Chatham, &c.

Dredging was in progress with the dredge *Excavator* in 1908 under contract with Peter England to cut a channel with about 2 feet at low water through flats at the Black Lands or Tabusintac gully, which is the shoalest point of the passage.

The cut about 25 feet wide made in 1908 was found last spring to have deepened by the current produced and the dredging was therefore continued between September 28 and October 30, when 5,340 cubic yards of sand were removed in widening the cut,

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which is 800 feet long, to 60 feet, with 2 feet at low water, and starting another strip 100 feet long 40 feet wide and $2\frac{1}{2}$ feet deep at low water.

The expenditure for the fiscal year amounted to \$2,058.45.

TRAVERSE, RESTIGOUCHE COUNTY.

From July 12 to October 9, 1909, the dredge *St. Lawrence* was engaged at Traverse, Restigouche county, removing 40,005 cubic yards sand and old logs at a cost of \$13,391.57, or 33.47 cents per cubic yard.

WANAMAKER'S, KINGS COUNTY.

From May 20 to 22, 1909, the dredge *New Brunswick* was engaged cutting a channel through the bar at Wanamaker's, near Hampton, Kings county, removing 1,050 cubic yards mud and logs at a cost of 18.72 cents per cubic yard.

PROVINCE OF PRINCE EDWARD ISLAND.

ASYLUM WHARF.

The Falconwood Asylum for the care of the insane, maintained by the government of Prince Edward Island, is situated on the north bank of the East or Hillsborough river about $1\frac{1}{2}$ miles east of Charlottetown. For convenience in carriage of coal required for the institution, the local government in 1906 built a wharf extending to low water, and to which the department, in the same year, dredged a channel 50 feet wide carrying a depth of about 6 feet at low water or $15\frac{1}{2}$ feet at H.W. spring tides that here rise $9\frac{1}{2}$ feet.

From May 17 to June 16, 1909, 10,125 cubic yards mud, clay and rock were removed by the dredge *Prince Edward*, making a channel 750 feet long and turning basin to a depth of 10 feet L.W.S.T. at a cost of \$2,675.84, or 26.44 cents per cubic yard.

GEORGETOWN, KINGS COUNTY.

From November 25, 1909, to January 5, 1910, dredging was performed at Georgetown, Kings county, by the dredge *Prince Edward*, 2,407 cubic yards brick clay, mud and rocks being removed at a cost of \$1,949.14, or 80.97 cents per cubic yard. Dredging here was very difficult.

CHARLOTTETOWN HARBOUR.

Charlottetown Harbour, Queens county, is reached from Northumberland Straits, through Hillsborough bay, its entrance from latter, between Blockhouse and Sea Trout Pointe, being about $\frac{3}{4}$ of a mile wide which width continues for about a mile to Cause and Battery points, immediately within which, at the confluence of the Hillsborough, West and North rivers, it expands into one of the finest harbours in America, being accessible for vessels of the largest class and affording perfect safety for any number or description. Charlottetown, the capital of Prince Edward Island, is situated on the north bank of the Hillsborough river a short distance within the entrance and where the deepest water approaches the shore; its wharfs, however, have required being built from 500 to 700 feet long to reach the edge of the channel or deep water, while to render the sides and different docks of service, improvement by dredging is required from time to time, and during the past season the following work of this nature was done by the dredge *Prince Edward*:—

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Marine Wharf, Queens County.

The dredge *Prince Edward* worked at Marine wharf, Charlottetown, from July 5 to 14, 1909, removing 1,845 cubic yards mud to a depth of 17 feet L.W.S.T., at a cost of \$1,042.77, or 56.51 cents per cubic yard.

Navigation Company's Wharf, Queens County.

From April 27 to May 16, 1909, the dredge *Prince Edward* was engaged at Navigation Company's wharf, Charlottetown, removing 6,705 cubic yards mud, sand and rocks to a depth of from 20 to 16 feet L.W.S.T., at a cost of \$2,089.46, or 31.61 cents per cubic yard.

Peake's and Queens Docks, Queens County.

From June 17 to July 4, the dredge *Prince Edward* was engaged in removing from Peake's and Queens wharf, Charlottetown, 4,860 cubic yards of mud and sand to a depth of 8 to 17 feet L.W.S.T. at a cost of \$1,586.60, or 32.65 cents per cubic yard.

POWNA, QUEENS COUNTY.

At Pownal, Queens County, the dredge *Prince Edward* was engaged from July 15 to September 18, and from September 29 to October 6, 1909, removing 14,400 cubic yards mud, sand and clay at a cost of \$3,620.10, or 25.41 cents per cubic yard.

PINETTE, QUEENS COUNTY.

The dredge *Montague* worked at Pinette, Queens county, from June 15 to August 17, 1909, removing 15,500 cubic yards mud and sand to 8 feet L.W.S.T., at a cost of \$4,784.13, or 30.86 cents per cubic yard.

SOURIS, KINGS COUNTY.

From April 29 to June 14, 1909, the dredge *Montague* was engaged at Souris, Kings county, and removed 14,400 cubic yards mud, rock and clay, at a cost of \$2,908 or 20.19 cents per cubic yard. Depth of dredging, 20 feet L.W.S.T.

SUMMERSIDE HARBOUR.

Summerside Harbour, Prince county, is on the southern side of the island and is the second place in importance as to population, shipping, &c. From it, during the season of navigation (usually from April 15 to December 15) daily communication is had by vessels of the 'Charlottetown Steam Navigation Company, Ltd.' to Pointe du Chêne, where connection is made with the Intercolonial railway and so with all parts of Canada and the continent. The harbour is commodious and safe, and as a depth of 20 feet at low water can be carried into it, this, with the rise of tide of from 5 to 7 feet, gives ample water for vessels of good draught, such as that of several lines of steamers from and to Montreal, St. John's, Newfoundland, &c.

The water carried at some of the wharfs having been found inadequate, for improvement of this, the dredge *Montague* was engaged from September 2 up to December 10 last, working first September 2 to 14, on the eastern side of the railway wharf, where a berth about 300 feet long by about 60 feet wide was deepened to an average of 16 feet at low water, this requiring the removal of about 5,500 cubic yards of mud and clay; and secondly, from September 14 to December 10, deepening the water at the end and either side of the 'Queens' or Town wharf, making loading berths 200 feet long by 60 feet wide, carrying a depth of 16 feet at low water spring tides. An approach was also made from the outer deep water to the end of the wharf, and on

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the eastern side an additional length of 100 feet was dredged to give a depth of 10 feet at low water, this in all requiring the removal of 35,450 cubic yards of mud, clay and hardpan, at a cost of \$9,100.38 or 25.39 cents per cubic yard.

VERNON RIVER, KINGS COUNTY.

At Vernon River, Kings county, the dredge *Prince Edward* removed 7,470 cubic yards mud, working from October 7 to November 9, 1909, at a cost of \$3,009.40, or 40.28 cents per cubic yard.

DREDGING PLANT.

The following is a summary description of the dredging plant owned and operated by the Public Works Department in the provinces of New Brunswick and Prince Edward Island:—

The Self-Propelling Elevator Dredge 'St. Lawrence' (iron hull).

Length over all, 175 feet; beam, 30 feet; draft, when loaded, aft, 13.5 feet; draft, when loaded, forward, 8.5 feet; least working depth (ladder with 32 buckets dropped 30 feet from bow), 8.5 feet; greatest working depth (bucket ladder dropped 40 feet from bow), 28 feet.

Capacity of hopper for spoil material, 350 cubic yards.

Speed when light, 6 to 7 miles per hour.

Speed when loaded, 3 to 4 miles per hour.

Daily rate of dredging hard material, 350 to 700 cubic yards.

“ “ ordinary earth, 750 to 1,000 cubic yards.

“ “ soft material, 1,050 to 1,400 cubic yards.

“ “ using barges to remove spoil, 1,200 to 1,600 cubic yards.

Number of steel barges, three.

The Spoon Dredge 'New Dominion' (wooden hull).

Last operation by this dredge was at Leonardville, Charlotte county, N.B., on February 12, 1910, when dredge broke down, leaving uncompleted a small part of the work there. Being condemned as unfit for further use, she was then removed to St. Andrews, N.B., where under instructions, boiler and machinery were removed and sold by public auction. The hull of dredge was disposed of by tender.

The Spoon Dredge 'Prince Edward' (wooden hull).

Length over all, 80 feet; width, 28 feet; draft, 6 feet; greatest working depth, 21 feet.

Daily rate of dredging in hard material, 300 cubic yards.

“ “ with ordinary material, 500 cubic yards.

“ “ in soft material, 600 to 700 cubic yards.

Number of dump scows used, three.

The Spoon Dredge 'New Brunswick' (wooden hull). (Changed this year from Clam-Shell Dredge).

Length over all, 78 feet; width, 29 feet; draft, 6 feet; greatest working depth, 18 feet.

Daily rate dredging in hard material, 500 cubic yards.

“ “ in ordinary material, 700 cubic yards.

“ “ in soft material, 900 cubic yards.

Number of dump scows used, two.

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The Self-propelling Elevator and Sand Pump Dredge 'W. S. Fielding' (steel hull).

Length over all, 247 feet.
 Width over all, 42 feet.
 Draft when loaded aft, 19 feet.
 Greatest working depth, 61 feet.
 Capacity of hoppers for spoil, 1,000 cubic yards.
 Speed when light, 7 miles per hour.
 Speed when loaded, 4 miles per hour.
 Daily rate of dredging, 2,000 cubic yards with buckets.
 Daily rate of dredging, 1,000 cubic yards with sand pump.
 Daily rate of dredging, using barges to remove spoil, 1,000 to 4,000 cubic yards.
 Number of steel barges used, four.

The Spoon Dredge 'Montague' (steel hull).

Length over all, 90 feet.
 Width, 37 feet 8 inches.
 Draft, 5 feet 6 inches.
 Greatest working depth, 28 feet.
 Daily rate of dredging, 10 hours, 1,000 cubic yards.
 Number of barges used, two, 72 feet long, 19 feet 8 inches wide, depth, 7 feet.

Tug 'Helena.'

Length, 111 feet; beam, 23 feet; hold, 13 feet; horse-power, 87.

Tug 'Hercules.'

Length, 73 feet; breadth, 20 feet; hold, 8 feet 2 inches; net tonnage, 24; gross tonnage, 87; horse-power, 50 (Sc.)

MEMORANDUM of quantities removed by the several dredges in the provinces of New Brunswick and Prince Edward Island during the fiscal year 1909-10.

| | Cubic Yards. |
|---------------------------------|--------------|
| <i>St. Lawrence</i> | 50,200 |
| <i>New Dominion</i> | 98,754 |
| <i>Prince Edward</i> | 47,812 |
| <i>Geo. McKenzie</i> | 3,465 |
| <i>New Brunswick</i> | 116,260 |
| <i>W. S. Fielding</i> | 403,575 |
| <i>Montague</i> | 65,350 |
| Total | 785,416 |

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CLASSIFICATION OF DISBURSEMENTS of the Dredges during the Year ending March 31, 1910.

DREDGE 'ST. LAWRENCE.'

| ITEMS. | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Grand Total. |
|----------------------------|---------|----------|----------|----------|----------|------------|----------|-----------|-----------|----------|-----------|----------|--------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages. | 201 10 | 558 37 | 508 81 | 627 08 | 608 08 | 601 36 | 580 89 | 561 56 | 466 58 | 385 12 | 292 04 | 402 00 | 6,062 99 |
| Coal. | 117 43 | 237 40 | 830 45 | 1,022 40 | 1,022 40 | 210 49 | 135 64 | 14 25 | 45 50 | ..... | ..... | ..... | 2,268 43 |
| Provisions. | 162 01 | 294 18 | 925 61 | 261 60 | 148 66 | ..... | 350 47 | 392 82 | 142 63 | ..... | ..... | ..... | 1,903 04 |
| Stores. | 76 15 | 368 75 | 20 21 | 9 70 | ..... | ..... | ..... | ..... | ..... | ..... | 81 91 | 22 97 | 624 16 |
| Equipment. . . . . | ..... | ..... | ..... | ..... | 12 38 | ..... | 4 00 | 81 91 | ..... | 20 39 | ..... | ..... | 119 28 |
| Water. | 11 00 | ..... | ..... | ..... | ..... | ..... | ..... | 24 67 | 29 00 | 64 67 | ..... | ..... | 64 67 |
| Repairs. | 142 35 | 133 15 | 2,840 05 | 156 24 | 117 87 | 687 79 | 129 01 | 34 90 | 269 95 | 22 32 | 1,074 22 | 1,625 86 | 7,233 71 |
| Pilotage. . . . . | ..... | 25 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 25 00 |
| Towage. | 10 00 | ..... | ..... | 2,560 00 | 1,040 00 | 1,000 00 | 1,000 00 | 620 00 | ..... | ..... | ..... | ..... | 6,220 00 |
| Wharfage. . . . . | ..... | ..... | ..... | 60 00 | 1,040 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 10 00 |
| Contingencies. | 33 33 | 43 88 | ..... | ..... | 8 00 | 4 28 | ..... | 30 47 | ..... | 22 61 | ..... | 12 81 | 215 38 |
| Totals. | 937 37 | 1,571 23 | 4,515 13 | 3,674 62 | 2,957 29 | 2,503 92 | 1,920 01 | 1,760 58 | 953 66 | 451 04 | 1,438 17 | 2,063 64 | 24,746 66 |
| Working expenses. | 795 62 | 1,438 08 | 1,675 08 | 3,516 38 | 2,839 42 | 1,816 13 | 1,701 00 | 1,725 68 | 182 31 | ..... | ..... | ..... | 15,781 10 |
| Repairs, ordinary. | 142 35 | 133 15 | 15 48 | 156 24 | 15 65 | 687 79 | 129 01 | 34 90 | ..... | ..... | ..... | ..... | 1,313 97 |
| " extraordinary. . . . . | ..... | ..... | 2,824 57 | ..... | 102 82 | ..... | ..... | ..... | 771 35 | 451 04 | 1,438 17 | 2,063 64 | 7,651 59 |
| Totals. | 937 37 | 1,571 23 | 4,515 13 | 3,674 62 | 2,957 29 | 2,503 92 | 1,920 01 | 1,760 58 | 953 66 | 451 04 | 1,438 17 | 2,023 64 | 24,746 66 |

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DREDGE 'NEW DOMINION'.

| | | | | | | | | | | | | | |
|-----------------------------|----------|--------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--------|-----------|
| Wages..... | 475 00 | 473 18 | 475 00 | 475 00 | 475 00 | 477 50 | 503 50 | 480 00 | 474 18 | 475 00 | 468 67 | 256 16 | 5,511 19 |
| Coal..... | | | 75 44 | 262 12 | 865 12 | 865 12 | 20 00 | 20 50 | | 59 48 | 12 68 | | 1,314 74 |
| Provisions..... | 136 49 | 111 35 | 102 68 | 100 31 | 100 41 | 103 19 | 96 18 | 109 19 | 107 96 | 72 51 | 86 97 | 28 25 | 1,164 49 |
| Stores..... | 82 62 | 38 95 | | 61 64 | 12 14 | | 8 92 | | 24 46 | | | | 228 13 |
| Equipment..... | | 11 60 | | | | 89 65 | | | | | | | 100 65 |
| Water..... | | | | | | | | | | 5 25 | | | 5 25 |
| Repairs..... | 150 83 | 51 06 | | 20 33 | | 124 63 | | 13 69 | | | | 81 90 | 445 44 |
| Pilotage..... | | | | | | | | 10 00 | | | | | 10 00 |
| Towage..... | 418 00 | | 780 00 | 1,030 00 | 780 00 | 711 57 | 582 24 | 724 63 | 780 00 | 750 00 | 480 00 | | 7,535 84 |
| Contingencies.. | 26 24 | | 3 40 | 16 08 | | 3 28 | 1 50 | 1 99 | 1 96 | 2 29 | 6 50 | 31 73 | 34 97 |
| Totals..... | 1,289 18 | 686 54 | 1,436 52 | 2,464 88 | 2,241 67 | 1,909 82 | 1,214 34 | 1,359 40 | 1,388 56 | 1,364 53 | 1,054 22 | 401 04 | 16,410 70 |
| Working expenses..... | 1,128 35 | 635 18 | 1,426 52 | 2,414 55 | 2,241 67 | 1,865 19 | 1,214 34 | 1,345 71 | 1,388 56 | 1,364 53 | 1,054 22 | | 15,649 12 |
| Repairs, ordinary..... | 150 83 | 51 06 | | 20 33 | | 124 63 | | | | | | 401 04 | 346 85 |
| Repairs, extraordinary..... | | | | | | | | 13 69 | | | | | 414 73 |
| Totals..... | 1,289 18 | 686 54 | 1,436 52 | 2,464 88 | 2,241 67 | 1,909 82 | 1,214 34 | 1,359 40 | 1,388 56 | 1,364 53 | 1,054 22 | 401 04 | 16,410 70 |

DREDGE 'PRINCE EDWARD'.

| | | | | | | | | | | | | | |
|-----------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--------|--------|----------|-----------|
| Wages..... | 875 40 | 479 87 | 499 11 | 505 00 | 501 27 | 501 10 | 557 55 | 495 00 | 506 61 | 490 43 | 225 00 | 497 80 | 5,957 14 |
| Coal..... | | | 10 80 | 429 32 | 429 71 | 135 00 | 110 81 | 436 52 | 154 25 | | 50 37 | | 779 74 |
| Provisions..... | | 10 36 | 24 45 | 6 20 | 429 71 | | 110 81 | 436 52 | | | 251 71 | 16 31 | 1,286 10 |
| Stores..... | | | 34 55 | 275 87 | 86 60 | | 382 44 | 24 90 | | | | 144 10 | 948 46 |
| Equipment..... | | | | | 84 82 | | 6 76 | | | | | 82 67 | 174 25 |
| Water..... | | | | | 62 55 | | 121 00 | 15 20 | 58 97 | | | | 312 82 |
| Repairs..... | 29 94 | 52 38 | | | 232 75 | | 78 41 | 29 50 | | | | 404 91 | 813 92 |
| Pilotage..... | | | | | | | 58 00 | 26 00 | | | | | 64 00 |
| Towage..... | 183 00 | 612 50 | 650 00 | 665 00 | 603 65 | 590 67 | 594 14 | 609 00 | 800 00 | 75 00 | | | 5,313 36 |
| Wharfage..... | | | | | 31 25 | | 31 25 | | | | | | 31 25 |
| Contingencies..... | | | 2 00 | 41 24 | 10 35 | | 26 36 | 51 10 | | 11 00 | 30 85 | 2 10 | 169 54 |
| Totals..... | 1,031 34 | 1,155 11 | 1,220 91 | 1,977 73 | 2,014 73 | 1,226 77 | 1,910 66 | 1,721 22 | 1,519 83 | 186 43 | 457 93 | 1,057 92 | 15,880 58 |
| Working expenses..... | 1,008 40 | 1,102 73 | 1,220 91 | 1,977 73 | 1,781 98 | 1,226 77 | 1,832 25 | 1,698 72 | 1,519 83 | 486 43 | 270 71 | 245 18 | 14,371 64 |
| Repairs, ordinary..... | 22 94 | 52 38 | | | | | 78 41 | 22 50 | | | | | 176 93 |
| Repairs, extraordinary..... | | | | | | | 232 75 | | | | | 812 74 | 1,332 71 |
| Totals..... | 1,031 34 | 1,155 11 | 1,220 91 | 1,977 73 | 2,014 73 | 1,226 77 | 1,910 66 | 1,721 22 | 1,519 83 | 486 43 | 567 93 | 1,057 92 | 15,880 58 |

1 GEORGE V., A. 1911

CLASSIFICATION OF DISBURSEMENTS OF THE DREDGES DURING THE YEAR ENDING MARCH 31, 1910.
DREDGE 'GEO. MCKENZIE.'

| ITEMS. | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Grand Total. |
|----------------------|---------|---------|---------|---------|---------|------------|----------|-----------|-----------|----------|-----------|---------|--------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages... | | | | | | | 590 07 | | | | | | 590 07 |
| Coal... | | | | | | | 144 45 | | | | | | 144 45 |
| Provisions... | | | | | | | 197 33 | | | | | | 197 33 |
| Stores... | | | | | | | 11 42 | | | | | | 11 42 |
| Water... | | | | | | | 50 00 | | | | | | 50 00 |
| Towage... | | | | | | | 585 94 | | | | | | 585 94 |
| Contingencies... | | | | | | | | 4 36 | | | | | 4 36 |
| Totals | | | | | | | 1,489 21 | 4 36 | | | | | 1,493 57 |
| Working expenses... | | | | | | | | | | | | | |
| Repairs, ordinary... | | | | | | | 1,489 21 | 4 36 | | | | | 1,493 57 |
| " extraordinary | | | | | | | | | | | | | |
| Totals | | | | | | | 1,489 21 | 4 36 | | | | | 1,493 57 |

SESSIONAL PAPER No. 19

DREDGE "NEW BRUNSWICK."

| | | | | | | | | | | | |
|--------------------|--------|----------|----------|----------|----------|----------|----------|----------|--------|----------|-----------|
| Wages..... | 397 89 | 408 95 | 423 58 | 465 00 | 415 58 | 415 00 | 407 28 | 421 08 | 693 75 | 1,012 14 | 5,590 16 |
| Coal..... | 189 25 | 126 62 | 129 71 | 121 68 | 167 12 | 401 79 | 133 93 | 13 50 | | | 1,075 11 |
| Provisions..... | 50 15 | | 22 12 | 16 33 | 8 80 | | 98 33 | | | | 1,062 46 |
| Stores..... | 214 91 | | | 17 56 | 124 77 | | 11 03 | | | | 348 67 |
| Equipment..... | | | | | | | 74 36 | | | | 262 91 |
| Water..... | 4 00 | | | | | | | | | | 4 00 |
| Repairs..... | 131 64 | 2 80 | 2 10 | 55 00 | 32 75 | 38 63 | 57 50 | | | | 1,848 27 |
| Towage..... | 80 00 | 765 00 | 698 02 | 713 01 | 646 08 | 631 00 | 602 02 | 424 43 | | | 4,698 09 |
| Wharfage..... | | | | | | | | | | | 2 40 |
| Contingencies..... | 1 70 | 1 80 | 1 55 | 16 31 | 2 53 | 1 40 | 4 80 | 3 05 | 4 00 | 59 41 | 100 85 |
| Totals..... | 982 54 | 1,305 69 | 1,463 91 | 1,456 20 | 1,394 65 | 1,622 11 | 1,174 12 | 1,152 41 | 658 86 | 1,876 01 | 14,998 92 |

Working expenses.....
Repairs, ordinary.....
" extraordinary.....

| | | | | | | | | | | | |
|-------------|--------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| Totals..... | 817 90 | 1,301 78 | 1,461 51 | 1,400 09 | 1,361 90 | 1,583 41 | 1,116 62 | 1,152 41 | 331 86 | | 10,558 18 |
| | 154 64 | 3 90 | 2 40 | | 32 75 | 38 63 | 57 50 | | | | 269 82 |
| | | | | 55 60 | | | | 658 96 | 1,187 69 | 1,876 01 | 4,170 92 |
| Totals..... | 982 54 | 1,305 69 | 1,463 91 | 1,456 20 | 1,394 65 | 1,622 11 | 1,174 12 | 1,152 41 | 658 86 | 1,876 01 | 14,998 92 |

DREDGE "W. S. FIELDING."

| | | | | | | | | | | | | |
|--------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| Wages..... | 1,054 55 | 1,195 92 | 1,461 54 | 1,591 93 | 1,554 75 | 1,484 08 | 1,587 19 | 1,245 76 | 1,258 30 | 1,225 40 | 1,077 33 | 15,875 20 |
| Coal..... | 10 88 | 56 27 | 57 40 | 828 93 | 384 78 | 486 30 | 7 50 | 653 84 | 796 68 | 639 42 | 371 90 | 5,497 02 |
| Provisions..... | 242 16 | 272 85 | 147 23 | 435 08 | 423 51 | 319 31 | 345 62 | 262 18 | 421 91 | 507 68 | 291 20 | 3,735 95 |
| Stores..... | 60 34 | 56 53 | 1,144 35 | 1,533 80 | 65 81 | 336 75 | 27 80 | 83 11 | 38 94 | 110 78 | 557 17 | 3,719 39 |
| Equipment..... | | | | 32 63 | 242 00 | 575 01 | 48 85 | 76 32 | 210 87 | 3 60 | 279 73 | 1,589 72 |
| Water..... | 52 80 | 116 40 | 13 50 | 96 05 | 80 00 | 26 40 | 84 47 | 135 30 | 159 79 | 144 80 | 60 20 | 1,098 81 |
| Repairs..... | 194 16 | 2,325 12 | 1,079 56 | 1,150 19 | 41 48 | 1,490 08 | 1,034 08 | 989 57 | 253 85 | 683 88 | 4,289 66 | 13,922 93 |
| Pilotage..... | | | 25 00 | 178 00 | 130 00 | 130 00 | 135 00 | 125 00 | 130 00 | 90 00 | 65 00 | 1,123 00 |
| Towage..... | | | | | | 61 25 | 15 00 | 187 50 | 385 00 | 975 00 | 11 50 | 1,635 25 |
| Wharfage..... | 175 00 | | | 50 31 | 540 31 | 65 25 | 200 00 | 239 69 | 339 06 | 473 11 | 44 38 | 2,134 61 |
| Contingencies..... | 4 00 | 12 15 | 32 50 | 29 20 | 0 75 | 7 61 | 42 50 | 21 52 | 35 78 | 13 28 | 8 43 | 210 75 |
| Totals..... | 1,703 89 | 4,035 24 | 4,278 28 | 5,626 30 | 3,467 42 | 4,582 64 | 3,528 01 | 4,030 79 | 4,020 21 | 4,470 83 | 3,983 22 | 50,542 63 |

Working Expenses.....
Repairs, ordinary.....
" extraordinary.....

| | | | | | | | | | | | | |
|-------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| Totals..... | 1,599 73 | 1,710 12 | 931 50 | 4,238 85 | 3,422 94 | 3,492 55 | 2,493 93 | 3,011 22 | 3,706 36 | 3,714 15 | 331 25 | 28,782 12 |
| | 194 16 | 2,197 34 | 3,346 78 | 531 80 | 44 48 | 417 06 | 1,034 08 | 178 51 | 253 85 | | | 2,781 75 |
| | | | | 835 64 | | 1,073 62 | | 811 03 | | 756 68 | 2,951 97 | 7,006 30 |
| Totals..... | 1,703 89 | 4,035 24 | 4,278 28 | 5,626 30 | 3,467 42 | 4,582 64 | 3,528 01 | 4,030 79 | 4,020 21 | 4,470 83 | 3,983 22 | 50,542 63 |

1 GEORGE V., A. 1911

CLASSIFICATION OF DISBURSEMENTS of the Dredges during the Year ending March 31, 1910.
DREDGE 'MONTAGUE.'

| Items. | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Grand Total. |
|------------------------|---------|----------|----------|----------|----------|------------|----------|-----------|-----------|----------|-----------|----------|--------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages..... | 611 25 | 505 00 | 541 00 | 505 00 | 511 03 | 505 00 | 510 00 | 515 00 | 449 47 | 275 00 | 311 50 | 434 50 | 5,673 75 |
| Coal..... | 163 50 | 163 50 | 28 00 | 141 75 | 178 80 | 270 00 | 50 33 | 50 33 | 111 60 | ..... | 105 53 | ..... | 998 51 |
| Provisions..... | 111 57 | 538 65 | 108 52 | 147 11 | 143 11 | 92 68 | 55 45 | 148 78 | 104 45 | ..... | ..... | 186 43 | 1,437 75 |
| Stores..... | ..... | 299 41 | ..... | ..... | 79 21 | 90 10 | ..... | 215 46 | ..... | 31 53 | ..... | ..... | 685 71 |
| Equipment..... | ..... | ..... | ..... | ..... | 117 50 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 117 50 |
| Water..... | 27 00 | 18 80 | 45 10 | 49 00 | 31 00 | ..... | ..... | 13 30 | ..... | ..... | ..... | 36 00 | 226 10 |
| Repairs..... | ..... | ..... | 80 03 | ..... | 480 94 | 343 37 | 105 00 | 344 77 | ..... | 175 44 | ..... | 574 82 | 2,105 37 |
| Towage..... | 100 00 | 625 00 | 650 00 | 600 00 | 923 67 | 521 50 | 625 00 | 662 90 | 275 00 | ..... | ..... | ..... | 4,982 67 |
| Wharfage..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 9 00 | ..... | ..... | ..... | ..... | 9 00 |
| Contingencies.. | 10 50 | 9 30 | 29 98 | 6 32 | 22 34 | 15 00 | 12 45 | 92 05 | 13 87 | ..... | ..... | 61 86 | 204 67 |
| Totals..... | 860 32 | 1,800 25 | 1,743 04 | 1,449 18 | 2,487 60 | 1,837 65 | 1,309 40 | 2,060 09 | 954 39 | 481 97 | 417 03 | 1,294 11 | 16,695 03 |
| Working expenses..... | 800 32 | 1,800 25 | 1,693 01 | 1,449 18 | 2,006 66 | 1,494 28 | 1,203 40 | 1,715 32 | 954 39 | ..... | ..... | ..... | 13,146 81 |
| Repairs, ordinary..... | ..... | ..... | 80 03 | ..... | ..... | 343 37 | 106 00 | 344 77 | ..... | 481 97 | 417 03 | 1,294 11 | 874 17 |
| " extraordinary..... | ..... | ..... | ..... | ..... | 480 94 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2,574 05 |
| Totals..... | 860 32 | 1,800 25 | 1,743 04 | 1,449 18 | 2,487 60 | 1,837 65 | 1,309 40 | 2,060 09 | 954 39 | 481 97 | 417 03 | 1,294 11 | 16,695 03 |

SESSIONAL PAPER No. 19

TUG 'HERCULES'.

| | | | | | | | | | | | | | |
|------------------------|--------|--------|----------|----------|--------|--------|--------|----------|--------|--------|--------|--------|-----------|
| Wages..... | 615 17 | 656 52 | 350 00 | 305 78 | 320 00 | 320 00 | 341 00 | 347 50 | 358 14 | 323 45 | 320 00 | 302 50 | 4,620 56 |
| Coal..... | 37 50 | 2 41 | 178 46 | 143 62 | 315 16 | 117 99 | 59 90 | 244 41 | 223 11 | 129 09 | 31 25 | 28 87 | 1,511 86 |
| Provisions..... | 54 57 | 5 18 | 119 50 | 145 04 | 27 49 | 52 10 | 57 95 | 258 62 | 119 60 | 113 50 | 57 18 | 109 88 | 1,120 70 |
| Stores..... | 78 61 | 3 32 | 81 43 | 146 95 | 108 90 | 7 78 | 25 62 | 5 95 | 134 14 | 98 70 | 17 70 | ..... | 714 10 |
| Equipment..... | ..... | ..... | 5 50 | 65 83 | 112 34 | 2 50 | ..... | 62 58 | ..... | ..... | ..... | ..... | 248 75 |
| Water..... | ..... | ..... | ..... | 80 35 | 10 35 | 10 35 | 21 15 | 31 70 | 42 30 | 46 45 | 10 35 | 11 25 | 253 90 |
| Repairs..... | 88 70 | 2 10 | 877 64 | 167 02 | 106 29 | 66 31 | ..... | 508 82 | 26 29 | 46 14 | 85 47 | 298 92 | 2,273 70 |
| Towage..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 0 50 | 5 00 | 15 00 | ..... | 20 00 |
| Wharfage..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 12 90 | 24 05 |
| Contingencies..... | ..... | 4 00 | ..... | ..... | ..... | ..... | 10 65 | ..... | ..... | ..... | ..... | 0 18 | 4 18 |
| Totals..... | 874 55 | 675 53 | 1,615 53 | 1,054 59 | 990 18 | 577 03 | 516 36 | 1,459 58 | 904 08 | 762 92 | 536 95 | 824 50 | 10,791 80 |
| Working expenses..... | 785 85 | 673 43 | 646 82 | 887 57 | 883 89 | 510 72 | 516 36 | 950 75 | 877 79 | 711 78 | 46 25 | 40 90 | 7,522 12 |
| Repairs, ordinary..... | 88 70 | 2 10 | 968 71 | 167 02 | 106 29 | 66 31 | ..... | 75 01 | 26 29 | 51 14 | 6 33 | 783 60 | 371 03 |
| " extraordinary..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 433 81 | ..... | ..... | 484 37 | ..... | 2,888 65 |
| Totals..... | 874 55 | 675 53 | 1,615 53 | 1,054 59 | 990 18 | 577 03 | 516 36 | 1,459 58 | 904 08 | 762 92 | 536 95 | 824 50 | 10,791 80 |

TUG 'HELENA'.

| | | | | | | | | | | | | | |
|------------------------|----------|--------|----------|--------|-------|--------|-------|-------|-------|-------|-------|-------|----------|
| Wages..... | 579 65 | 552 22 | 555 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 1,686 88 |
| Coal..... | 297 40 | ..... | 412 05 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 619 45 |
| Provisions..... | 151 69 | ..... | 679 96 | 102 28 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 34 74 | 968 07 |
| Stores..... | ..... | ..... | 269 26 | ..... | ..... | ..... | ..... | ..... | ..... | 3 20 | ..... | 22 35 | 298 36 |
| Equipment..... | 65 00 | ..... | 11 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 75 00 |
| Water..... | 45 00 | ..... | 41 25 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 86 25 |
| Repairs..... | 13 85 | ..... | 39 31 | 86 35 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 489 16 |
| Pierage..... | 10 00 | ..... | 11 60 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 21 60 |
| Contingencies..... | 1 25 | ..... | 10 18 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 11 43 |
| Totals..... | 1,077 40 | 552 22 | 2,029 64 | 188 63 | ..... | 349 62 | ..... | ..... | ..... | 3 20 | ..... | 57 09 | 4,257 80 |
| Working expenses..... | 1,063 55 | 552 22 | 1,990 30 | 102 28 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 3,768 64 |
| Repairs, ordinary..... | 13 85 | ..... | 39 31 | 86 35 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 53 19 |
| " extraordinary..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 435 97 |
| Totals..... | 1,077 40 | 552 22 | 2,029 64 | 188 63 | ..... | 349 62 | ..... | ..... | ..... | 3 20 | ..... | 57 09 | 4,257 80 |

1 GEORGE V., A. 1911

CLASSIFICATION OF DISBURSEMENTS OF THE DREDGES during the Year ending March 31, 1910
TUG "HELENA."

| Items. | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Grand Total. |
|------------------------------|----------|--------|----------|----------|----------|------------|----------|-----------|-----------|----------|-----------|----------|--------------|
| | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ | £ |
| | cts. | cts. | cts. | cts. | cts. | cts. | cts. | cts. | cts. | cts. | cts. | cts. | cts. |
| Wages | 555 00 | 548 56 | 555 00 | 555 00 | 555 00 | 555 00 | 555 00 | 555 00 | 556 43 | 555 58 | 548 88 | 553 81 | 4,985 26 |
| Coal | 299 96 | 252 29 | 299 96 | 299 96 | 299 96 | 299 96 | 299 96 | 299 96 | 299 96 | 299 96 | 299 96 | 299 96 | 2,126 34 |
| Provisions | 299 87 | 252 29 | 299 87 | 299 87 | 299 87 | 299 87 | 299 87 | 299 87 | 299 87 | 299 87 | 299 87 | 299 87 | 2,108 69 |
| Stores | 224 00 | 224 00 | 224 00 | 224 00 | 224 00 | 224 00 | 224 00 | 224 00 | 224 00 | 224 00 | 224 00 | 224 00 | 1,031 15 |
| Equipment | 326 25 | 49 45 | 326 25 | 326 25 | 326 25 | 326 25 | 326 25 | 326 25 | 326 25 | 326 25 | 326 25 | 326 25 | 2,163 56 |
| Water | 49 45 | 49 45 | 49 45 | 49 45 | 49 45 | 49 45 | 49 45 | 49 45 | 49 45 | 49 45 | 49 45 | 49 45 | 2,163 56 |
| Repairs | 74 51 | 74 51 | 74 51 | 74 51 | 74 51 | 74 51 | 74 51 | 74 51 | 74 51 | 74 51 | 74 51 | 74 51 | 323 50 |
| Pilotage | 109 50 | 109 50 | 109 50 | 109 50 | 109 50 | 109 50 | 109 50 | 109 50 | 109 50 | 109 50 | 109 50 | 109 50 | 66 04 |
| Towage | 70 00 | 80 00 | 70 00 | 70 00 | 70 00 | 70 00 | 70 00 | 70 00 | 70 00 | 70 00 | 70 00 | 70 00 | 66 04 |
| Contingencies | 19 19 | 0 90 | 19 19 | 19 19 | 19 19 | 19 19 | 19 19 | 19 19 | 19 19 | 19 19 | 19 19 | 19 19 | 66 04 |
| Totals | 1,610 72 | 881 75 | 1,610 72 | 1,610 72 | 1,610 72 | 1,610 72 | 1,610 72 | 1,610 72 | 1,635 14 | 1,637 70 | 1,348 06 | 1,809 20 | 13,589 69 |
| Working expenses | 1,610 72 | 881 75 | 1,610 72 | 1,610 72 | 1,610 72 | 1,610 72 | 1,610 72 | 1,610 72 | 1,635 14 | 1,637 70 | 1,348 06 | 1,809 20 | 13,589 69 |
| Repairs, ordinary | 74 51 | 74 51 | 74 51 | 74 51 | 74 51 | 74 51 | 74 51 | 74 51 | 74 51 | 74 51 | 74 51 | 74 51 | 3,457 38 |
| Repairs, extraordinary | 1,536 21 | 807 24 | 1,536 21 | 1,536 21 | 1,536 21 | 1,536 21 | 1,536 21 | 1,536 21 | 1,560 63 | 1,563 19 | 1,273 55 | 1,734 69 | 2,447 46 |
| Totals | 1,610 72 | 881 75 | 1,610 72 | 1,610 72 | 1,610 72 | 1,610 72 | 1,610 72 | 1,610 72 | 1,635 14 | 1,637 70 | 1,348 06 | 1,809 20 | 13,589 69 |

SESSIONAL PAPER No. 19

DREDGE - GEO. McKENZIE.

| | | | | | | | | | | | | | |
|------------------------|----------|--------|----------|--------|--------|----------|----------|--------|--------|--------|--------|--------|-----------|
| Wages..... | 432 55 | 463 53 | 490 54 | 551 87 | 480 12 | 450 50 | 460 00 | 404 26 | 280 00 | 280 00 | 280 00 | 280 00 | 4,582 46 |
| Coal..... | | | 52 00 | | 310 50 | | 55 10 | 27 60 | | | | | 436 29 |
| Provisions..... | 84 20 | | 432 00 | 137 15 | 93 11 | 133 37 | 81 89 | 85 35 | 46 25 | 41 75 | 48 04 | | 1,180 11 |
| Stores..... | | | 115 66 | | | | * | | 4 23 | | | | 119 89 |
| Equipment..... | | | 31 25 | | | 42 95 | | | 14 66 | | 7 36 | | 56 22 |
| Water..... | | | | 8 67 | 4 33 | 6 50 | | 10 00 | | | | | 29 50 |
| Repairs..... | 622 58 | | 2,991 00 | 46 14 | 41 98 | 6 85 | 325 01 | 5 00 | 499 81 | 239 37 | 52 37 | | 4,827 61 |
| Pilotage..... | | | | | | | | | | | | | 5 00 |
| Towage..... | | | | | | | 1,620 00 | | | | | | 1,620 00 |
| Contingencies..... | 25 88 | | 27 79 | | | | | 7 11 | 21 55 | | 14 80 | | 45 13 |
| Totals..... | 1,163 21 | 463 53 | 4,143 24 | 743 83 | 939 01 | 2,268 76 | 929 09 | 538 55 | 862 27 | 564 12 | 402 57 | | 13,018 21 |
| Working expenses..... | 540 63 | 463 53 | 1,149 24 | 697 69 | 897 06 | 2,262 41 | 604 08 | 538 55 | 60 91 | Nil. | Nil. | | 7,214 10 |
| Repairs, ordinary..... | 622 58 | Nil. | 30 00 | 46 14 | 41 98 | 6 85 | 44 35 | Nil. | 459 81 | 564 12 | 402 57 | | 1,291 21 |
| " extraordinary..... | Nil. | Nil. | 2,964 00 | Nil. | Nil. | Nil. | 280 66 | Nil. | 301 65 | | | | 4,512 90 |
| Totals..... | 1,163 21 | 463 53 | 4,143 24 | 743 83 | 939 01 | 2,268 76 | 929 09 | 538 55 | 862 27 | 564 12 | 402 57 | | 13,018 21 |

CAPE BRETON.

| | | | | | | | | | | | | | |
|------------------------|----------|--------|----------|----------|----------|----------|----------|----------|----------|--------|----------|--|-----------|
| Wages..... | 555 90 | 502 88 | 510 00 | 510 00 | 646 50 | 546 01 | 555 00 | 560 00 | 310 93 | 311 00 | 300 37 | | 6,103 09 |
| Coal..... | | | | 304 00 | 75 40 | 499 20 | 84 00 | | | | 381 14 | | 1,343 74 |
| Provisions..... | 345 27 | | 659 67 | 314 73 | 291 91 | 232 53 | 134 52 | 147 41 | 120 69 | 50 00 | 155 00 | | 2,523 10 |
| Stores..... | 484 31 | | 574 11 | | | | 22 22 | | | | 77 53 | | 1,158 29 |
| Equipment..... | | | 50 75 | | | | | 280 43 | | 90 00 | 235 06 | | 656 24 |
| Water..... | 22 75 | | | 218 00 | 47 95 | | | | | | | | 288 70 |
| Repairs..... | 768 37 | 249 90 | 3,200 69 | 10 00 | | | | | 741 60 | | 513 22 | | 5,473 78 |
| Pilotage..... | | | | | | | | | | | | | 10 00 |
| Towage..... | | | | 1,989 58 | 1,460 00 | 1,128 00 | 1,750 00 | 1,685 13 | | | | | 11,353 71 |
| Wharfage..... | 40 00 | | | | | | | | | | | | 40 00 |
| Contingencies..... | 26 33 | | 5 69 | 2 76 | 12 25 | 6 13 | 23 40 | 20 29 | 12 25 | 49 39 | 29 63 | | 188 12 |
| Totals..... | 2,242 96 | 752 78 | 6,095 91 | 3,349 07 | 2,444 04 | 2,712 27 | 2,569 14 | 2,698 39 | 1,214 87 | 509 39 | 1,781 95 | | 29,185 68 |
| Working expenses..... | 1,474 50 | 502 88 | 2,895 22 | 3,349 07 | 2,444 04 | 2,712 27 | 2,569 14 | 2,698 39 | 132 34 | Nil. | 334 50 | | 21,880 35 |
| Repairs, ordinary..... | 334 28 | 249 90 | Nil. | Nil. | Nil. | Nil. | Nil. | Nil. | Nil. | Nil. | Nil. | | 584 18 |
| " extraordinary..... | 434 09 | Nil. | 3,200 69 | Nil. | Nil. | Nil. | Nil. | Nil. | 1,682 53 | 509 39 | 1,447 45 | | 6,674 15 |
| Totals..... | 2,242 96 | 752 78 | 6,095 91 | 3,349 07 | 2,444 04 | 2,712 27 | 2,569 14 | 2,698 39 | 1,214 87 | 509 39 | 1,781 95 | | 29,185 68 |

1 GEORGE V., A. 1911

CLASSIFICATION OF DISBURSEMENTS OF THE DRUDGES, during the Year ending March 31, 1910.

DREDGE 'CANADA.'

| Items. | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Grand total. |
|------------------------|----------|---------|----------|----------|----------|------------|----------|-----------|-----------|----------|-----------|----------|--------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages..... | 516 05 | 632 77 | 637 00 | 636 76 | 655 33 | 635 81 | 702 14 | 860 72 | 1,036 94 | 1,027 10 | 1,108 02 | 965 94 | 9,574 58 |
| Coal..... | 122 83 | ..... | 623 26 | 68 75 | 374 00 | 233 36 | 222 74 | 229 25 | 187 50 | 215 43 | 71 86 | 45 31 | 2,424 79 |
| Provisions..... | 176 30 | ..... | 465 48 | 286 34 | 220 97 | 239 49 | 133 22 | 366 37 | 284 69 | 235 22 | 80 64 | 311 05 | 2,819 97 |
| Stores..... | 52 42 | ..... | 10 47 | 281 15 | 122 38 | 97 70 | 302 61 | 163 64 | 166 11 | ..... | ..... | 339 26 | 1,535 74 |
| Equipment..... | ..... | ..... | ..... | 68 39 | ..... | 168 67 | 441 72 | 8 65 | ..... | 99 46 | 196 25 | 607 45 | 1,531 12 |
| Water..... | ..... | ..... | ..... | 37 50 | 33 00 | 34 50 | 37 50 | 23 00 | 24 50 | 13 00 | 645 75 | ..... | 263 00 |
| Repairs..... | 25 42 | ..... | 36 69 | 173 25 | 143 34 | 34 34 | 665 90 | 633 27 | 93 70 | 491 24 | 645 75 | 1,788 85 | 4,791 84 |
| Towage..... | 308 00 | ..... | 1,590 00 | 690 00 | 780 00 | 780 00 | 780 00 | 780 00 | 810 00 | 990 00 | 1,153 50 | 1,320 00 | 10,281 00 |
| Wharfage..... | 23 50 | ..... | 30 00 | ..... | 9 17 | 23 10 | 11 83 | 14 21 | 3 96 | 1 90 | 9 81 | 13 00 | 78 21 |
| Contingencies..... | 13 49 | ..... | 36 33 | 3 00 | ..... | ..... | ..... | ..... | ..... | 8 61 | 3 33 | 6 33 | 133 45 |
| Totals..... | 1,238 01 | 632 77 | 3,429 14 | 2,245 41 | 2,338 19 | 2,237 17 | 3,407 66 | 3,149 11 | 2,627 40 | 3,082 99 | 3,569 16 | 5,437 19 | 33,394 20 |
| Working expense..... | 1,212 59 | 632 77 | 3,392 54 | 2,072 18 | 2,194 45 | 2,202 03 | 2,741 76 | 2,445 84 | 2,533 70 | 1,389 90 | 2,235 10 | 2,769 64 | 25,833 50 |
| Repairs, ordinary..... | 25 42 | Nil. | 36 69 | 2 25 | 143 34 | 34 34 | 465 90 | 42 58 | 93 70 | 491 24 | Nil. | 75 12 | 1,610 69 |
| " extraordinary..... | Nil. | Nil. | Nil. | 170 98 | Nil. | Nil. | Nil. | 630 69 | Nil. | 1,291 85 | 1,334 06 | 2,592 43 | 5,950 01 |
| Totals..... | 1,238 01 | 632 77 | 3,429 14 | 2,245 41 | 2,338 19 | 2,237 17 | 3,407 66 | 3,149 11 | 2,627 40 | 3,082 99 | 3,569 16 | 5,437 19 | 33,394 20 |

SESSIONAL PAPER No. 19

DREDGE 'NORTHUMBERLAND'

| | | | | | | | | | | | | |
|------------------------|----------|--------|----------|----------|----------|----------|----------|----------|--------|----------|----------|-----------|
| Wages..... | 512 56 | 809 27 | 817 89 | 840 00 | 840 00 | 845 26 | 880 00 | 880 00 | 474 47 | 508 84 | 500 00 | 8,788 28 |
| Coal..... | 426 41 | ..... | 1,642 83 | 828 26 | 837 20 | 1,038 45 | 628 13 | 900 20 | 130 00 | 223 63 | 218 03 | 5,891 07 |
| Provisions..... | 601 70 | ..... | 534 30 | 381 54 | 305 37 | 296 27 | 372 34 | 205 06 | 136 85 | 25 52 | 460 48 | 3,467 33 |
| Stores..... | ..... | ..... | 900 11 | 117 68 | 44 46 | 18 15 | 163 69 | 67 80 | 125 50 | ..... | 90 00 | 2,681 91 |
| Equipment..... | ..... | ..... | 1,022 04 | ..... | 821 85 | ..... | 1,400 00 | 148 68 | 90 00 | ..... | ..... | 3,172 57 |
| Water..... | 100 00 | ..... | 219 37 | 210 06 | 160 50 | 177 75 | 123 75 | 191 25 | 47 04 | 349 93 | 3,122 87 | 1,221 62 |
| Repairs..... | 317 33 | ..... | 3,571 27 | 575 00 | 135 79 | 22 75 | 82 00 | 459 02 | ..... | ..... | ..... | 8,683 01 |
| Towage..... | ..... | ..... | 111 00 | 169 00 | ..... | ..... | ..... | 45 00 | ..... | ..... | ..... | 156 00 |
| Wharfage..... | 15 00 | ..... | 200 00 | ..... | ..... | ..... | ..... | 32 51 | 22 66 | 0 88 | 26 74 | 384 00 |
| Contingencies..... | 37 50 | ..... | 33 94 | 17 12 | 20 38 | 14 41 | 19 85 | 19 08 | ..... | ..... | ..... | 245 10 |
| Totals..... | 2,011 02 | 809 27 | 9,052 75 | 3,138 00 | 3,225 55 | 2,413 08 | 2,279 76 | 2,822 27 | 896 67 | 1,109 80 | 4,418 12 | 34,590 89 |
| Working expenses..... | 1,033 69 | 809 27 | 5,285 91 | 2,563 00 | 3,089 70 | 2,197 76 | 1,320 11 | 2,414 60 | Nil. | 143 64 | 1 25 | 21,909 34 |
| Repairs, ordinary..... | 317 33 | Nil. | 312 12 | Nil. | 135 79 | 22 76 | 82 00 | Nil. | Nil. | Nil. | Nil. | 870 00 |
| " extraordinary..... | Nil. | Nil. | 3,454 72 | 575 00 | Nil. | Nil. | 1,502 13 | Nil. | 896 67 | 906 16 | 4,416 87 | 11,811 55 |
| Totals..... | 2,011 02 | 809 27 | 9,052 75 | 3,138 00 | 3,225 55 | 2,413 08 | 2,279 76 | 2,822 27 | 896 67 | 1,109 80 | 4,418 12 | 34,590 89 |

TUG 'RONA.'

| | | | | | | | | | | | | |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|
| Wages..... | 224 58 | 222 67 | 255 00 | 326 27 | 255 00 | 255 00 | 255 00 | 255 00 | 160 00 | 160 00 | 160 00 | 2,783 52 |
| Coal..... | 25 67 | ..... | 32 50 | 16 87 | 19 00 | ..... | 57 00 | 88 13 | ..... | ..... | 22 75 | 261 92 |
| Provisions..... | 74 08 | ..... | 168 00 | 127 00 | 84 16 | 95 38 | 50 18 | 64 41 | 45 00 | 45 00 | 45 00 | 888 41 |
| Stores..... | ..... | ..... | 26 90 | 26 90 | ..... | ..... | 4 75 | 8 24 | 88 25 | ..... | 172 13 | 292 03 |
| Equipment..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 45 70 | ..... | 53 94 |
| Water..... | ..... | ..... | 26 00 | 26 00 | ..... | ..... | ..... | ..... | ..... | 3 70 | ..... | 29 70 |
| Repairs..... | 224 16 | ..... | ..... | ..... | 2 25 | ..... | ..... | 10 00 | ..... | 19 06 | ..... | 245 47 |
| Wharfage..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 10 00 |
| Contingencies..... | ..... | ..... | ..... | 5 44 | ..... | 2 73 | ..... | ..... | ..... | ..... | 3 98 | 12 15 |
| Totals..... | 324 33 | 222 67 | 679 66 | 511 61 | 356 03 | 372 11 | 347 43 | 306 95 | 293 25 | 254 40 | 422 92 | 4,577 14 |
| Working expenses..... | 324 33 | 222 67 | 455 50 | 511 61 | 356 03 | 372 11 | 345 18 | 306 95 | Nil. | Nil. | Nil. | 3,380 16 |
| Repairs, ordinary..... | Nil. | Nil. | 160 20 | Nil. | Nil. | Nil. | 2 25 | Nil. | Nil. | Nil. | Nil. | 162 45 |
| " extraordinary..... | Nil. | Nil. | 63 96 | Nil. | Nil. | Nil. | Nil. | Nil. | 293 25 | 254 40 | 422 92 | 1,034 53 |
| Totals..... | 324 33 | 222 67 | 679 66 | 511 61 | 356 03 | 372 11 | 347 43 | 306 95 | 293 25 | 254 40 | 422 92 | 4,577 14 |

CLASSIFICATION AND QUANTITIES OF MATERIAL REMOVED BY DREDGES during the Year ending March 31, 1910.

DREDGE 'ST. LAWRENCE.'

| Description of Material Dredged. | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Grand Total. |
|----------------------------------|--------|-------|-------|--------|---------|------------|----------|-----------|-----------|----------|-----------|--------|--------------|
| | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. | Yds. |
| Gravel..... | ..... | ..... | 1,155 | 215 | ..... | ..... | 420 | 630 | ..... | ..... | ..... | ..... | 2,420 |
| Logs..... | ..... | ..... | 1,015 | 255 | ..... | 210 | ..... | ..... | ..... | ..... | ..... | ..... | 1,480 |
| Sand and mud..... | ..... | ..... | ..... | 10,700 | 16,560 | 8,400 | 4,520 | 1,470 | ..... | ..... | ..... | ..... | 1,560 |
| Sand, very fine..... | ..... | ..... | 2,205 | 1,055 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 41,780 |
| Mud, old wood & bark..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 3,260 |
| Totals..... | Nil. | Nil. | 4,375 | 12,925 | 16,560 | 8,610 | 6,300 | 2,100 | Nil. | Nil. | Nil. | Nil. | 56,290 |

'NEW DOMINION.'

| | | | | | | | | | | | | | |
|----------------------------|-------|--------|-------|--------|--------|--------|--------|-------|-------|-------|-------|-------|--------|
| Gravel and mud..... | ..... | ..... | ..... | ..... | ..... | 3,800 | 10,672 | 8,040 | ..... | 8,012 | 8,757 | ..... | 22,262 |
| Clay, sand and shells..... | 3,225 | 10,675 | 9,362 | 11,955 | 11,853 | 6,400 | ..... | ..... | ..... | ..... | ..... | ..... | 22,512 |
| Sand and shells..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 53,980 |
| Totals..... | 3,225 | 10,675 | 9,362 | 11,955 | 11,853 | 10,700 | 10,672 | 8,040 | 8,012 | 8,757 | 5,513 | Nil. | 98,754 |

'PRINCE EDWARD.'

| | | | | | | | | | | | | | |
|--------------------------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Shell and mud..... | ..... | ..... | 4,320 | ..... | 5,805 | 1,305 | 990 | 405 | ..... | ..... | ..... | ..... | 990 |
| Clay, mud and rocks..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 11,925 |
| Clay and stone..... | ..... | ..... | ..... | ..... | ..... | 2,070 | ..... | ..... | 1,912 | ..... | ..... | ..... | 1,912 |
| Sand and mud..... | ..... | ..... | ..... | 4,320 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 2,070 |
| Sand, mud and rock..... | ..... | ..... | 5,985 | 1,530 | ..... | 900 | 5,085 | 2,160 | ..... | ..... | ..... | ..... | 5,130 |
| Mud..... | 1,755 | 8,370 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 25,785 |
| Totals..... | 1,755 | 9,180 | 10,305 | 5,850 | 5,805 | 4,275 | 6,075 | 2,565 | 1,912 | 90 | Nil. | Nil. | 47,812 |

1 GEORGE V., A. 1911

1 GEORGE V., A. 1911

Cost at various localities dredged by the Departmental Dredges during the Fiscal Year ending March 31, 1910.

'ST. LAWRENCE.'

| Locality. | Date. | Actual Dredging Time. | Quantity. | Cost. | Cost per Cubic Yard. |
|--|--|-----------------------|-----------|----------|----------------------|
| | | Hrs. Min. | | | |
| Government Wharf, Campbellton, Restigouche Co., N.B. | June 5 to July 10 and Oct. 11 to Nov. 9, 1909. | 173 00 | 10,195 | 5,198 41 | 50.99 |
| Traverse, Restigouche Co., N.B. | July 12 to Oct. 9, 1909. | 329 13 | 40,065 | 6,742 13 | 16.84 |

'NEW DOMINION.'

| | | | | | |
|-----------------------------------|--|---------|--------|-----------|-------|
| St. Andrews, Charlotte Co., N.B. | April 1 to 10 and April 26 to Nov. 30, 1909. | 1151 05 | 76,492 | 11,574 87 | 15.13 |
| Leonardville, Charlotte Co., N.B. | Dec. 6 to Feb. 14, 1910. | 333 00 | 22,262 | 3,713 60 | 16.60 |

'PRINCE EDWARD.'

| | | | | | |
|---|---|--------|--------|----------|-------|
| Navigation Co. wharf, Queens Co., P.E.I. | April 27 to May 16, 1909. | 204 16 | 6,765 | 1,086 52 | 16.19 |
| Asylum wharf and cut, Queens Co., P.E.I. | May 17 to June 16, 1909. | 152 10 | 10,125 | 1,391 37 | 13.74 |
| Peake and Queens dock, Queens Co., P.E.I. | June 17 to July 4, 1909. | 70 40 | 4,860 | 825 03 | 16.97 |
| Marine wharf, Queens Co., P.E.I. | July 5 to 14, 1909. | 41 00 | 1,845 | 542 24 | 29.38 |
| Pownal, " " | July 15 to Sept. 18 and Sept. 29 to Oct. 6, 1909. | 323 28 | 14,400 | 1,882 44 | 13.07 |
| Vernon River, " " | Oct. 7 to Nov. 9, 1909. | 114 30 | 7,470 | 1,564 88 | 20.94 |
| Georgetown, Kings Co., " " | Nov. 23, 1909, to Jan. 5, 1910 | 147 50 | 2,407 | 1,013 55 | 42.10 |

'W. S. FIELDING.'

| | | | | | |
|--|---|--------|---------|-----------|-------|
| Harbour channel, St. John, St. John Co., N.B. | July 2 to Sept. 8, 1909, and Nov. 12 to Feb. 3, 1910. | 534 00 | 360,375 | 28,524 43 | 7.91 |
| Winter port berths, St. John, St. John Co., N.B. | Sept. 9 to Oct. 20, 1909. | 133 50 | 43,200 | 8,222 93 | 19.03 |

'NEW BRUNSWICK.'

| | | | | | |
|--------------------------|--|--------|--------|----------|-------|
| Hampton, Kings Co., N.B. | April 30 to May 19 and May 23 to June 4, 1909. | 337 00 | 24,200 | 1,642 25 | 6.76 |
| Wanamakers, " " | May 20 to 22, 1909. | 21 00 | 1,050 | 109 02 | 10.38 |
| Clifton, " " | June 25, 1909. | 5 00 | 100 | 45 29 | 45.29 |
| Shampers, " " | July 1 to Oct. 23, 1909. | 817 00 | 76,980 | 5,303 76 | 6.89 |
| Jenkins, " " | Oct. 24 to Nov. 19, 1909. | 198 00 | 13,870 | 1,260 60 | 9.15 |

'MONTAGUE.'

| | | | | | |
|--------------------------------|----------------------------|--------|--------|----------|-------|
| Souris, Kings Co., P.E.I. | April 29 to June 14, 1909. | 240 30 | 14,400 | 1,643 45 | 11.41 |
| Pinette, Queens Co., P.E.I. | June 15 to Aug. 17, 1909. | 154 30 | 15,500 | 2,703 74 | 17.44 |
| Summerside, Prince Co., P.E.I. | Sept. 1 to Dec. 10, 1909. | 411 00 | 35,450 | 5,143 06 | 14.50 |

'GEO. McKENZIE.'

| | | | | | |
|-----------------------------------|---------------------|-------|-------|----------|-------|
| Port Elgin, Westmorland Co., N.B. | Oct. 8 to 26, 1909. | 82 00 | 3,465 | 1,841 00 | 53.13 |
|-----------------------------------|---------------------|-------|-------|----------|-------|

SESSIONAL PAPER No. 19

DETAILS OF DREDGING IN THE PROVINCES OF NEW BRUNSWICK AND PRINCE EDWARD ISLAND.
During the Fiscal Year ending March 31, 1910.

| Dredge | Locality. | Date. | Time Dredging. | Quantity. Cu. Yds. | Expendi- ture at Locality. | Per Cubic Yard for Local Expendi- ture. | | Total Cost. | | Per Cubic Yard for Total Expendi- ture. | |
|----------------|---|---|-------------------|-----------------------|----------------------------------|--|------|----------------|------|--|---------|
| | | | | | | \$ | cts. | \$ | cts. | \$ | cts. |
| St. Lawrence | Govt. Wharf Campbellton, Restigouche Co., N.B. | June 5 to July 10 and Oct. 11 to Nov. 9, 1909. | Hrs. Min. | Cu. Yds. | \$ | cts. | | \$ | cts. | \$ | cts. |
| " | Traverse, Restigouche Co., N.B. | July 12 to Oct. 9, " | 173 00 | 10,185 | 5,198 41 | | | 5,198 41 | | 10,325 35 | 1 01 28 |
| New Dominion | St. Andrews, Charlotte Co., N.B. | Apr. 1 to 10 and Apr. 26 to Nov. 30, 1909. | 329 13 | 40,065 | 6,742 13 | | | 6,742 13 | | 13,391 57 | 0 33 47 |
| Prince Edward | Leonardville, Co., P.E.I. | Dec. 6 to Feb. 14, 1910. | 1,151 05 | 76,492 | 11,574 87 | | | 11,574 87 | | 12,497 06 | 0 16 24 |
| " | Navigation Coy's Wharf, Queens Co., P.E.I. | | 328 00 | 25,282 | 3,713 60 | | | 3,713 60 | | 205 88 | 0 18 01 |
| " | Asylum Wharf and Cart, Queens Co., P.E.I. | Apr. 27 to May 16, 1909 | 204 16 | 6,705 | 1,086 52 | | | 1,086 52 | | 2,080 46 | 0 31 61 |
| " | Peake and Queens Dock, Queens Co., P.E.I. | May 17 to June 16, " | 152 10 | 10,125 | 1,301 37 | | | 1,301 37 | | 2,675 84 | 0 26 44 |
| " | Marine Wharf, Queens Co., P.E.I. | June 17 to July 4, " | 70 40 | 4,860 | 825 03 | | | 825 03 | | 1,586 60 | 0 32 65 |
| " | Pownal | July 5 to 14, 1909. | 41 00 | 1,845 | 512 24 | | | 512 24 | | 1,042 77 | 0 56 51 |
| " | Vernon River | Sept. 29 to Oct. 6, 1909 | 325 28 | 11,400 | 1,829 14 | | | 1,829 66 | | 3,620 40 | 0 25 41 |
| Geo. McKenzie, | Port Elgin, Westmorland Co., N.B. | Nov. 25 to Jan. 5, 1910. | 114 30 | 7,470 | 1,564 88 | | | 1,444 52 | | 3,069 40 | 0 40 28 |
| New Brunswick | Hampton, Kings Co., N.B. | Apr. 30 to May 19 and May 23 to June 4, 1909 | 82 00 | 3,465 | 1,841 55 | | | 935 59 | | 1,919 14 | 0 80 97 |
| " | Wanamakers | May 20 to 22, 1909 | 307 00 | 24,250 | 1,642 25 | | | 1,317 90 | | 2,920 15 | 0 12 20 |
| " | Clifton | June 25, 1909. | 21 00 | 1,050 | 109 02 | | | 87 53 | | 196 55 | 0 18 72 |
| " | Shampera | July 1 to Oct. 23, 1909. | 5 00 | 100 | 45 29 | | | 36 38 | | 81 67 | 0 11 47 |
| " | Jenkins Cove | Oct. 24 to Nov. 19, 1909 | 817 00 | 76,980 | 5,393 76 | | | 4,256 12 | | 9,539 88 | 0 12 41 |
| W. S. Fielding | Harbour Channel, St. John, St. John Co., N.B. | July 2 to Sept. 8 and Nov. 12 to Feb. 3, 1910 | 198 00 | 13,870 | 1,269 60 | | | 1,018 65 | | 2,288 25 | 0 16 49 |
| " | Waterport Berths, St. John, St. John Co., N.B. | Sept. 9 to Oct. 20, 1909 | 534 00 | 360,375 | 28,524 43 | | | 29,973 49 | | 58,497 92 | 0 16 23 |
| Montague | Sunris, Kings Co., P.E.I. | Apr. 29 to June 14, " | 133 50 | 43,200 | 8,222 93 | | | 8,640 71 | | 16,863 64 | 0 39 27 |
| " | Summerside, Prince Co., P.E.I. | June 19 to Aug. 17, " | 210 30 | 14,400 | 1,613 45 | | | 1,284 55 | | 2,908 00 | 0 20 19 |
| " | Summerside, Prince Co., P.E.I. | Sept. 1 to Dec. 10, " | 154 30 | 15,500 | 2,703 74 | | | 2,080 39 | | 4,784 13 | 0 30 86 |
| " | Summerside, Prince Co., P.E.I. | Sept. 1 to Dec. 10, " | 411 00 | 35,450 | 5,143 06 | | | 3,957 32 | | 9,100 38 | 0 25 39 |
| Totals | | | 6,028 12 | 785,416 | 91,983 57 | | | 73,306 53 | | 163,280 10 | 0 21 04 |

1 GEORGE V., A. 1911

EXPENDITURE for Dredging in New Brunswick for the Thirty-eighth Year ended March 31, 1910.

| County. | Locality. | FOR THE THIRTY-SEVENTH YEAR ENDED MARCH 31, 1909. | | | | FOR THE YEAR 1909-10. | | | | Total Quantity. | Total Cost. \$ cts. | Cost for each County \$ cts. | |
|------------|------------------------|--|---------|--------|---------------------|-----------------------|--------|------|---------------------|--------------------|------------------------|------------------------------------|----|
| | | Quantity. | Cost. | | Cost for County. | Quantity. | Cost. | | Cost for County. | | | | |
| | | | \$ | cts. | | | \$ | cts. |  |  |  |  | \$ | cts. |
| Charlotte | St. Andrews | Cubic yards. | 111,270 | 24,432 | 50 | | | | | 111,270 | 24,432 50 | | |
| | " New Wharf | | 38,637 | 11,103 | 73 | | | | | 38,637 | 11,103 73 | | |
| | " Basin East. Entrance | | 20,570 | 7,060 | 53 | | | | | 97,042 | 19,557 59 | | |
| | St. George | | 12,720 | 5,593 | 97 | 76,492 | 12,497 | 06 | | 127,200 | 5,593 97 | | |
| Gloucester | Le-Flece | | 4,145 | 1,187 | 27 | | | | | 4,145 | 1,187 27 | | |
| | Black Harbour | | 2,055 | 1,075 | 12 | | | | | 2,055 | 1,075 12 | | |
| | Leonardville | | | | | 22,262 | 4,069 | 48 | 16,506 | 54 | 22,262 | 4,069 48 | |
| | Bathurst | | 98,637 | 29,095 | 79 | | | | | 98,637 | 29,095 79 | | |
| Kent | Carsquet | | 16,485 | 6,312 | 23 | | | | | 16,485 | 6,312 23 | | |
| | Shippagan | | 88,954 | 33,490 | 54 | | | | | 88,954 | 33,490 54 | | |
| | Richibucto | | 172,788 | 53,544 | 01 | | | | | 172,778 | 53,544 01 | | |
| | Cocagne | | 27,180 | 9,691 | 45 | | | | | 27,180 | 9,691 45 | | |
| Kings | Buctonche. | | 13,005 | 4,934 | 24 | | | | | 13,005 | 4,934 24 | | |
| | " Priest's Point. | | 3,510 | 1,110 | 70 | | | | | 3,510 | 1,110 70 | | |
| | " Chapel | | 4,140 | 1,310 | 07 | | | | | 4,140 | 1,310 07 | | |
| | " Robertson's Wharf. | | 45 | 14 | 23 | | | | | 45 | 14 23 | | |
| Kings | Belleisle. | | 147,655 | 21,401 | 67 | | | | | 147,655 | 21,401 67 | | |
| | Kennebecus River | | 116,270 | 20,081 | 83 | | | | | 116,270 | 20,081 83 | | |
| | Moss Glen. | | 10,970 | 2,092 | 36 | | | | | 10,970 | 2,092 36 | | |
| | Westfield. | | 1,300 | 362 | 19 | | | | | 1,300 | 362 19 | | |
| | Glennwood Wharf | | 28,600 | 2,417 | 77 | | | | | 28,600 | 2,417 77 | | |
| | Shamper's Wharf | | 4,705 | 703 | 67 | 76,980 | 9,559 | 88 | | 81,680 | 10,262 95 | | |
| | Jenkin's Cove. | | 13,650 | 1,720 | 64 | 13,870 | 2,288 | 25 | | 27,520 | 4,008 89 | | |
| | Cedars. | | 25,700 | 1,948 | 64 | | | | | 25,700 | 1,948 64 | | |
| | Evandale. | | 75 | 67 | 18 | | | | | 75 | 67 18 | | |
| | Oak Point. | | 12,100 | 1,979 | 65 | | | | | 12,100 | 1,979 65 | | |
| | Victoria Wharf. | | 21,700 | 2,448 | 40 | | | | | 21,700 | 2,448 40 | | |
| | Long Island | | 5,380 | 2,041 | 57 | | | | | 5,380 | 2,041 57 | | |
| | Flewelling Wharf | | 1,400 | 413 | 15 | | | | | 1,400 | 413 15 | | |
| | Reed's Point | | 980 | 455 | 56 | | | | | 980 | 455 56 | | |
| Kings | Clifton | | 620 | 204 | 06 | | | | | 720 | 285 73 | | |
| | Whitehead | | 2,500 | 401 | 78 | 100 | 81 | 67 | | 2,500 | 401 78 | | |
| | Murphy (Perry Point). | | 9,650 | 950 | 62 | | | | | 9,650 | 950 62 | | |

SESSIONAL PAPER No. 19

| | | | | | | |
|------------------------------|---------|-----------|------------|-----------|---------|-----------|
| Sealy's Shoal. | 34,615 | 4,872 18 | 24,230 | 2,960 15 | 34,615 | 4,872 18 |
| Hampton. | 6,020 | 1,978 12 | | | 30,280 | 4,938 27 |
| Rodney. | 130 | 22 66 | | | 130 | 22 66 |
| Wanamaker's. | 298,892 | 55,058 36 | 66,561 90 | 1,050 | 1,050 | 196 55 |
| Horse Shoe, Miramichi. | 29,935 | 7,965 31 | | | 298,892 | 55,058 36 |
| Outer Bar. | 37,975 | 10,121 67 | | | 29,935 | 7,965 31 |
| Grand Dune. | 22,425 | 4,403 05 | | | 37,975 | 10,121 67 |
| Gordon Flats. | 6,300 | 6,969 76 | | | 22,425 | 4,403 95 |
| Negus. | 13,201 | 4,888 64 | | | 6,300 | 6,969 76 |
| Loggerville. | 215,032 | 30,085 41 | 89,407 09 | | 13,201 | 4,888 64 |
| Grand Lake. | 20,440 | 4,522 82 | | | 215,032 | 30,085 41 |
| McNair's Cove. | 87,230 | 17,190 06 | | | 20,440 | 4,522 82 |
| Joueg. | 65,675 | 8,073 65 | | | 87,230 | 17,190 06 |
| Wassadenauak. | 2,000 | 1,073 31 | | | 65,675 | 8,073 65 |
| Cambridge Wharf. | 4,840 | 1,055 20 | | | 2,000 | 1,073 31 |
| Ackerlek's. | 270 | 212 72 | | | 4,840 | 1,055 20 |
| Hueste. | 5,000 | 764 58 | | | 270 | 212 72 |
| Webster's. | 5,750 | 422 14 | | | 5,000 | 764 58 |
| Robertson's. | 8,290 | 2,537 52 | | | 5,750 | 422 14 |
| Colwell's Ck. | 12,040 | 3,274 90 | | | 8,290 | 2,537 52 |
| Grimess Middle Ground. | 45,935 | 7,739 97 | | | 12,040 | 3,274 90 |
| Gagetown Creek Canal. | 9,315 | 1,192 36 | | | 45,935 | 7,739 97 |
| Spoon Island. | 46,025 | 4,963 59 | | | 9,315 | 1,192 36 |
| Ward's Shoal, Salmon River. | 36,625 | 3,369 16 | | | 46,025 | 4,963 59 |
| Curley Shoal. | 104,275 | 12,269 49 | | | 36,625 | 3,369 16 |
| Chipman and Briggs' Corner. | 1,700 | 1,104 90 | | | 104,275 | 12,269 49 |
| Upper Gagetown Wharf. | 38,525 | 4,556 66 | | | 1,700 | 1,104 90 |
| McChure Shoal. | 14,475 | 1,335 06 | | | 38,525 | 4,556 66 |
| Queen's Coal Co., Newcastle. | 1,290 | 401 36 | | | 14,475 | 1,335 06 |
| Hampstead. | 669 25 | | | | 1,290 | 401 36 |
| Belyon's Wharf. | 669 25 | | 106,744 20 | | 669 25 | |
| Dalhousie. | 22,301 | 6,543 68 | | | 22,301 | 6,543 68 |
| McMaans Contract. | 13,336 | 1,825 67 | | | 13,336 | 1,825 67 |
| Every Wharf. | 8,460 | 1,263 48 | | | 8,460 | 1,263 48 |
| Every Landing. | 12,092 | 3,632 33 | | | 12,092 | 3,632 33 |
| Hillyards. | 19,250 | 4,846 50 | | | 19,250 | 4,846 50 |
| Traverse, Oak Bay. | 143,150 | 30,182 00 | 40,005 | 13,391 57 | 143,150 | 30,182 00 |
| Campbellton, Gov't, Wharf. | 31,000 | 10,795 74 | 10,195 | 10,325 35 | 31,000 | 10,795 74 |
| Contract. | 9,880 | 2,264 11 | | | 9,880 | 2,264 11 |
| Rasin. | 18,375 | 10,354 33 | | | 18,375 | 10,354 33 |
| I. C. Railway Terminals. | 212,224 | 52,633 18 | 74,361 34 | 23,716 92 | 212,224 | 52,633 18 |
| Navy Island. | 30,890 | 13,361 95 | | | 30,890 | 13,361 95 |
| Marble Cove. | 29,925 | 4,374 40 | | | 29,925 | 4,374 40 |
| Murray Mills. | 27,535 | 3,681 41 | | | 27,535 | 3,681 41 |
| Indiantown Wharf. | 1,615 | 192 83 | | | 1,615 | 192 83 |
| Long Wharf. | 7,137 | 2,680 24 | | | 7,137 | 2,680 24 |
| Miller and Woodman's. | 9,275 | 1,090 42 | | | 9,275 | 1,090 42 |
| St. John. | | | | | | 98,078 26 |

1 GEORGE V., A. 1911

EXPENDITURE for Dredging in New Brunswick for the Thirty-eighth Year ended March 31, 1910.

| County. | Locality. | FOR THE THIRTY SEVENTH YEAR ENDED MARCH 31, 1910. | | | | FOR THE YEAR 1909-10. | | | | Total Quantity. | Total Cost. | | Cost for each County | |
|--------------------------|-----------------------------|--|---------|---------|---------------------|-----------------------|---------|--------|---------------------|--------------------|-------------|---------|-------------------------|----|
| | | Quantity. | Cost. | | Cost for County. | Quantity. | Cost. | | Cost for County. | | Total Cost. | | | |
| | | | \$ | cts. | | | \$ | cts. |  |  |  |  |  | \$ | cts. |
| St. John. | Hayford and Stetson. | Cubic yards. | 942 | 29 | | Cubic yards. | | | | 8,015 | 942 | 29 | | |
| | Indiantown Wharf. | | 450 | 52 | 40 | | | | | 450 | | | | |
| | Adam's Wharf. | | 7,315 | 3,217 | 25 | | | | | 7,315 | 3,247 | 29 | | |
| | Anchor Line Wharf. | | 4,695 | 996 | 81 | | | | | 4,695 | 996 | 81 | | |
| | Dominion Atlantic Wharf. | | 15,525 | 4,484 | 72 | | | | | 15,525 | 4,484 | 72 | | |
| | St. John Winter Berths | | 453,178 | 85,342 | 19 | | 43,200 | 16,863 | 64 | | 496,378 | 102,165 | 83 | |
| | " Harbour Channel. | | 353,733 | 82,342 | 20 | | 309,575 | 58,497 | 92 | | 714,108 | 140,840 | 12 | |
| | Purves and Murchie Mills | | 675 | 142 | 57 | | | | | 675 | 142 | 57 | | |
| | McAvity Wharf | | 4,110 | 696 | 88 | | | | | 4,110 | 696 | 88 | | |
| | Lawton Wharf | | 1,570 | 101 | 46 | | | | | 1,570 | 101 | 46 | | |
| | Thorne Wharf | | 1,980 | 249 | 02 | | | | | 1,980 | 249 | 02 | | |
| | Martine Nail Co. | | 1,425 | 224 | 52 | | | | | 1,425 | 224 | 52 | | |
| Sumbury. | Cushing's Mills. | | 33,150 | 2,222 | 69 | | | | | 33,150 | 2,222 | 69 | | |
| | Hilward Bros. | | 1,400 | 314 | 19 | | | | | 1,400 | 314 | 10 | | |
| | Kennebecasis River. | | 2,025 | 694 | 37 | | | | | 2,025 | 694 | 37 | | |
| | Partridge Island. | | 4,650 | 2,594 | 22 | | | | | 4,650 | 2,294 | 22 | | |
| | " Channel for water pipe | | 8,215 | 5,173 | 82 | | 267,256 | 48 | | 8,215 | 5,173 | 82 | | |
| | Oromocto. | | 401,572 | 67,527 | 26 | | | | | 401,572 | 67,527 | 26 | | |
| | McLean Wharf | | 625 | 181 | 59 | | | | | 625 | 181 | 59 | | |
| | Ox Island. | | 51,800 | 5,266 | 50 | | | | | 51,800 | 5,266 | 50 | | |
| | French Lake | | 25,475 | 3,787 | 49 | | | | | 25,475 | 3,787 | 49 | | |
| | Bent's Wharf, Manigerville. | | 2,310 | 428 | 44 | | | | | 2,310 | 428 | 44 | | |
| | Upper Sheffield. | | 3,830 | 425 | 15 | | | | | 3,830 | 425 | 15 | | |
| | Westmorland | Point Du Chene. | | 182,980 | 42,162 | 18 | | | | | 182,980 | 42,162 | 18 | |
| Cape Tormentine | | | 35,120 | 9,004 | 02 | | | | | 35,120 | 9,004 | 02 | | |
| York | Port Edgemo. | | | | | | | | | | | | | |
| | Fredericton. | | 126,365 | 21,679 | 06 | | | | | | | | | |
| | St. Mary's Ferry | | 13,570 | 6,827 | 36 | | | | | | | | | |
| | Gleason | | 30,385 | 4,379 | 52 | | | | | | | | | |
| | Nashwaak | | 1,600 | 435 | 22 | | | | | | | | | |
| | Fisher and Chestnut Shoals. | | 8,200 | 1,547 | 12 | | | | | | | | | |
| Canada Eastern Ry Wharf. | | | 3,470 | 1,913 | 48 | | | | | | | | | |
| | | | | | | | | | | | 342,618 | 04 | | |
| | | | | | | | | | | | 77,916 | 43 | | |
| | | | | | | | | | | | 53,018 | 86 | | |

SESSIONAL PAPER No. 19

| | | | | | | | | | | | |
|---|-----------|------------|------------|---------|------------|------------|-----------|--------------|--------------|--------------|--------------|
| Springhill, Chapel and Russell Bars..... | 96,295 | 24,386 78 | 63,499 07 | 672,254 | 132,523 28 | 132,523 28 | 5,341,853 | 24,386 78 | 63,499 07 | 1,120,884 39 | 1,120,884 39 |
| Robertson's Bar..... | 6,965 | 1,717 16 | 1,591 12 | | | | | 1,717 16 | 1,591 12 | | |
| Douglas Roads..... | 14,235 | 1,512 87 | | | | | | 1,512 87 | | | |
| N. R. Equipment..... | | 1,591 12 | | | | | | 1,591 12 | | | |
| | 4,659,599 | 988,361 11 | 988,361 11 | 672,254 | 132,523 28 | 132,523 28 | 5,341,853 | 1,120,884 39 | 1,120,884 39 | | |

SESSIONAL PAPER No. 19

| | | | | | | |
|---------------------------------|-----------|------------|------------|-----------|-----------|------------|
| Vernon River..... | 25,240 | 8,292 55 | 7,470 | 3,009 40 | 32,710 | 11,201 95 |
| Wood Islands..... | 8,465 | 11,801 57 | | | 8,465 | 11,801 57 |
| Nine Mile Creek..... | 32,650 | 6,295 42 | | | 31,650 | 6,295 46 |
| Hickey Wharf..... | 750 | 150 51 | | | 750 | 150 51 |
| Carr's Point..... | 12,165 | 2,441 28 | | | 12,165 | 2,441 28 |
| Picette..... | 3,825 | 756 24 | 15,509 | 4,784 13 | 19,825 | 5,540 37 |
| Fort Augustus..... | 3,195 | 631 68 | | | 3,195 | 631 68 |
| Southport Ferry..... | 45,300 | 7,508 75 | | | 45,300 | 7,508 75 |
| Red Point..... | 7,161 | 3,879 60 | | | 7,161 | 3,879 60 |
| North Rustico..... | 13,536 | 4,775 38 | | | 13,536 | 4,775 38 |
| South Rustico..... | 11,649 | 4,109 67 | | | 11,649 | 4,109 67 |
| Gauthier's Creek..... | 17,847 | 8,305 50 | | | 17,847 | 8,305 50 |
| Malpeque..... | 28,575 | 3,483 32 | | | 28,575 | 3,483 32 |
| French River..... | 41,671 | 13,311 46 | | | 41,671 | 13,311 46 |
| Bay View..... | 4,095 | 1,912 87 | | | 4,095 | 1,912 87 |
| Wedlocks..... | 1,260 | 529 48 | | | 1,260 | 529 48 |
| Bedfast, Hallidays Wharf..... | 15,435 | 4,468 78 | | | 15,435 | 4,468 78 |
| Marine and Fisheries Wharf..... | 11,610 | 4,909 19 | | | 13,455 | 5,031 96 |
| Poake and Queens Dock..... | | | 254,473 00 | 1,845 | 4,860 | 1,586 60 |
| Summerside..... | 91,571 | 28,032 51 | | 1,042 77 | 18,808 30 | |
| Hurd's Point Pier..... | 65,565 | 14,315 47 | | 1,588 60 | | |
| Tignish..... | 11,367 | 13,003 45 | | 9,100 38 | | |
| Casumpej..... | 1,157 | 538 42 | | | 65,565 | 14,315 47 |
| Cape Traverse..... | 16,740 | 5,105 89 | | | 11,367 | 13,003 45 |
| Holmans Wharf..... | 9,585 | 1,269 21 | | | 1,157 | 538 42 |
| | | | 42,266 85 | | 16,740 | 5,105 89 |
| | | | | | 9,585 | 1,269 21 |
| Prince..... | 1,731,651 | 475,024 48 | 113,162 | 32,765 82 | 1,844,813 | 507,790 30 |
| | | | | | | 273,281 30 |
| | | | | | | 71,367 33 |
| | | | | | | 507,790 30 |

EXPENDITURE for Dredging in Quebec for the Thirty-eighth Year ended March 31, 1910.

From Appropriation Maritime Provinces.

| | | | | | | |
|---|--------|----------|--|--|--------|-----------|
| Magdalen Islands..... | 6,800 | 2,392 92 | | | 6,800 | 2,392 92 |
| Co. Gaspé..... | 405 | 912 05 | | | 242 05 | 2,634 97 |
| House Harbour..... | | 2,634 97 | | | 2,587 | 825 47 |
| Amherst Harbour..... | 2,587 | 825 47 | | | 8,123 | 3,997 59 |
| River du Loup..... | | 3,997 59 | | | 17,010 | 7,465 70 |
| Rimouski..... | 8,123 | 2,985 76 | | | | |
| Mission Point..... | 17,010 | | | | | |
| Between Mission Point and Campbellton..... | 7,770 | 7,755 74 | | | 7,770 | 3,225 80 |
| | | | | | | 18,149 53 |
| | | | | | 42,785 | 18,149 53 |

1 GEORGE V., A. 1911

Cost at localities dredged in New Brunswick and Prince Edward Island during the Fiscal Year ending March 31, 1910.

| Dredge. | Locality. | Date. | Time Dredging. | Quantity. C. yds. | Cost. \$ cts. | Cost per Cubic Yard. |
|-----------------|--|--|-------------------|----------------------|------------------|-------------------------|
| | | | | | | |
| St. Lawrence | Government Wharf, Campbellton, Restigouche, Co., N. B. | June 5 to July 10 and Oct. 11 to Nov. 9, 1909 | 173 00 | 10,195 | 5,198 41 | 0 50 99 |
| | Traverse, Restigouche Co., N. B. | July 12 to Oct. 9, 1909 | 329 13 | 40,065 | 6,742 13 | 0 16 84 |
| New Dominion. | St. Andrews, Charlotte Co., N. B. | April 1 to 10 and April 26 to Nov. 30, 1909 | 1,151 05 | 76,492 | 11,574 87 | 0 15 13 |
| | Leonardville, " | Dec. 6 to Feb. 14, 1910 | 538 00 | 22,292 | 3,713 60 | 0 16 60 |
| Prince Edward | Navigation Co. Wharf, Queens Co., P. E. I. | April 27 to May 16, 1909 | 294 16 | 6,785 | 1,086 52 | 0 16 19 |
| | Asylum Wharf and Cart | May 17 to June 16, 1909 | 132 10 | 10,125 | 1,351 37 | 0 13 74 |
| | Peaks and Queens Dock | June 17 to July 4, 1909 | 70 40 | 4,860 | 855 03 | 0 16 97 |
| | Marine Wharf | June 5 to July 14, 1909 | 41 60 | 1,845 | 542 24 | 0 29 38 |
| | Pownal | July 15 to Sept. 18 and Sept. 29 to Oct. 6, 1909 | 323 28 | 14,400 | 1,882 44 | 0 13 07 |
| | Vernon River | Oct. 7 to Nov. 9, 1909 | 114 30 | 7,470 | 1,564 88 | 0 20 94 |
| | Georgetown, King's Co., P. E. I. | Nov. 23 to Jan. 5, 1910 | 147 50 | 2,407 | 1,013 55 | 0 42 10 |
| Geo. McKenzie. | Port Elgin, Westmorland Co., N. B. | Oct. 8 to Oct. 26, 1909 | 82 00 | 3,465 | 1,841 00 | 0 53 13 |
| New Brunswick | Hampton, King's Co., N. B. | Apr. 30 to May 19 and May 23 to June 4, 1906 | 397 00 | 24,250 | 1,642 25 | 0 66 76 |
| | Wanamakers | May 20 to May 22, 1909 | 21 00 | 1,050 | 109 02 | 0 10 38 |
| | Clifton | June 25, 1909 | 5 00 | 100 | 45 29 | 0 45 29 |
| | Sluiceway | July 1 to Oct. 23, 1909 | 817 00 | 76,880 | 5,303 76 | 0 68 80 |
| W. S. Fielding. | Jenkins Wharf | Oct. 24 to Nov. 19, 1909 | 198 00 | 13,870 | 1,269 60 | 0 09 15 |
| | Harbour Channel, St. John, St. John Co., N. B. | July 2 to Sept. 4 and Nov. 12 to Feb. 3, 1910 | 534 00 | 39,075 | 28,524 43 | 0 07 91 |
| | Winter Berths | Sept. 9 to Oct. 29, 1909 | 133 50 | 43,200 | 8,222 93 | 0 19 03 |
| Montague | Souris, Kings Co., P. E. I. | April 29 to June 14, 1909 | 240 30 | 14,400 | 1,643 45 | 0 11 41 |
| | Picette, Queens Co., P. E. I. | June 15 to Aug. 17, 1909 | 154 30 | 15,500 | 2,703 74 | 0 17 44 |
| " | Summerside, Prince Co., P. E. I. | Sept. 1 to Dec. 10, 1909 | 411 00 | 35,450 | 5,143 06 | 0 14 50 |

SESSIONAL PAPER No. 19

STATEMENT of Dredging in the Maritime Provinces showing Quantities removed by and Expenditure of each Dredge during the thirty eight years ended March 31, 1910.

| Dredge. | TOTAL QUANTITIES AND COST FOR THIRTY-SEVEN YEARS ENDED MARCH 31, 1909. | | | | FOR THE YEAR 1909-10. | | | | TOTAL FOR THE THIRTY-EIGHTH YEAR ENDED MARCH 31, 1910. | | | |
|------------------------|--|-----------|-------|-----------------|-----------------------|---------|-------|-----------------|--|-----------|-------------|----------------------|
| | Total quantity. | | Cost. | | Quantity. | | Cost. | | Total quantity. | | Total cost. | |
| | Cub. yds. | \$ | cts. | Per cubic yard. | Cub. yds. | \$ | cts. | Per cubic yard. | Cub. yds. | \$ | cts. | Cost per cubic yard. |
| St. Lawrence | 1,847,494 | 473,713 | 12 | 0 25-64 | 50,200 | 23,716 | 92 | 0 47-24 | 1,897,694 | 497,430 | 04 | 0 25-87 |
| Canada | 1,243,029 | 381,051 | 61 | 0 30-62 | | | | | | | | |
| New Brunswick | 1,991,419 | 359,560 | 35 | 0 18-45 | 98,754 | 16,506 | 51 | 0 16-71 | 2,090,173 | 375,066 | 89 | 0 18-47 |
| Prince Edward | 1,766,958 | 419,687 | 33 | 0 26-78 | 47,812 | 15,973 | 31 | 0 33-29 | 1,814,770 | 435,060 | 64 | 0 26-98 |
| (Old) Cape Breton | 534,938 | 139,474 | 33 | 0 25-90 | | | | | | | | |
| Geo. McKenzie | 836,749 | 357,456 | 11 | 0 41-72 | 3,465 | 1,851 | 76 | 0 53-13 | 840,214 | 359,307 | 87 | 0 41-76 |
| Cape Breton. | 1,026,465 | 191,456 | 23 | 0 18-65 | | | | | | | | |
| New Brunswick. | 538,065 | 106,701 | 24 | 0 19-95 | 116,940 | 15,086 | 50 | 0 12-67 | 654,925 | 121,787 | 74 | 0 18-62 |
| W. S. Fielding | 767,435 | 137,221 | 22 | 0 17-86 | 403,576 | 75,361 | 56 | 0 18-67 | 1,171,510 | 212,582 | 78 | 0 18-99 |
| Montague | 328,250 | 32,190 | 72 | 0 25-88 | 65,350 | 16,192 | 51 | 0 25-60 | 193,600 | 48,983 | 23 | 0 20-53 |
| Northumberland | 513,115 | 221,589 | 16 | 0 05-75 | | | | | | | | |
| Loggieville (Contract) | 13,291 | 4,888 | 04 | 0 37-02 | | | | | | | | |
| | 11,028,238 | 2,632,539 | 46 | 0 23-87 | 785,416 | 165,289 | 16 | 0 21-04 | 8,482,286 | 2,651,830 | 19 | 0 24-19 |

STATEMENT of Dredging performed by hand in the Maritime Provinces, showing Quantities removed and Expenditure at each locality for thirty-eight years, ended March 31, 1910.

| Locality. | TOTAL QUANTITY AND COST FOR THIRTY-SEVEN YEARS ENDED MARCH 31, 1909. | | | | FOR THE YEAR 1909-10. | | | | Total quantity. | | | |
|------------------|--|--------|-------|-----------------|-----------------------|----|-------|-----------------|-----------------|--------|-------------|----------------------|
| | Total quantity. | | Cost. | | Quantity. | | Cost. | | Total quantity. | | Total cost. | |
| | Cub. yds. | \$ | cts. | Per cubic yard. | Cub. yds. | \$ | cts. | Per cubic yard. | Cub. yds. | \$ | cts. | Cost per cubic yard. |
| Parrsboro, N. S. | 42,595 | 12,804 | 68 | 0 30-06 | | | | | 42,595 | 12,804 | 68 | 0 30-06 |
| Windsor, " | 5,450 | 1,627 | 00 | 0 29-86 | | | | | 5,450 | 1,627 | 00 | 0 29-86 |
| Milton, " | 663 | 499 | 46 | 0 75-35 | | | | | 663 | 499 | 46 | 0 75-35 |
| Racquette, " | 1,645 | 496 | 38 | 0 30-17 | | | | | 1,645 | 496 | 38 | 0 30-17 |
| | 50,353 | 15,428 | 12 | 0 30-64 | NIL | | | NIL | 50,353 | 15,428 | 12 | 0 30-64 |

1 GEORGE V., A. 1911

STATEMENT of Dredging showing Quantities Removed in each Province and Cost of each Work for the Thirty-eighth Year ended March 31, 1910.

| Fiscal Year. | NEW BRUNSWICK. | | | NOVA SCOTIA. | | | QUEBEC. | | | PRINCE EDWARD ISLAND. | | | Total Expenditure | Total Quantity. | Cost per Cubic Yrd. |
|--------------|----------------|-----------|-----------|--------------|-----------|----------|-----------|----------|---------|-----------------------|-----------|---------|-------------------|-----------------|---------------------|
| | Quantity. | Cost. | \$ cts. | Quantity. | Cost. | \$ cts. | Quantity. | Cost. | \$ cts. | Quantity. | Cost. | \$ cts. | | | |
| | | | | | | | | | | | | | | | |
| 1872-3 | 38,606 | 13,240 50 | 8,422 70 | 23,200 | 6,343 61 | 2,892 92 | ..... | ..... | ..... | ..... | ..... | ..... | 21,643 20 | 61,320 | 0 25 328 |
| 1873-4 | 57,725 | 14,395 57 | 6,343 61 | 18,000 | 18,283 86 | ..... | 6,800 | ..... | ..... | 18,655 | 9,892 89 | ..... | 23,334 10 | 83,125 | 0 28 71 |
| 1874-5 | 78,823 | 17,325 63 | 24,416 | 24,416 | 18,283 86 | ..... | ..... | ..... | ..... | 58,283 | 10,891 80 | ..... | 40,456 77 | 121,294 | 0 33 354 |
| 1875-6 | 79,935 | 17,040 52 | 91,975 | 91,975 | 34,846 74 | ..... | ..... | ..... | ..... | 127,785 | 12,011 18 | ..... | 49,818 22 | 230,192 | 0 21 642 |
| 1876-7 | 97,490 | 23,161 90 | 127,785 | 127,785 | 34,846 74 | ..... | ..... | ..... | ..... | 82,800 | 12,011 18 | ..... | 70,766 91 | 299,935 | 0 23 594 |
| 1877-8 | 81,676 | 23,323 92 | 106,897 | 106,897 | 28,297 59 | ..... | ..... | ..... | ..... | 46,490 | 9,164 07 | ..... | 64,943 04 | 270,787 | 0 23 983 |
| 1878-9 | 152,555 | 27,400 22 | 116,307 | 116,307 | 34,765 84 | ..... | ..... | ..... | ..... | 36,380 | 12,674 98 | ..... | 64,943 04 | 295,352 | 0 21 951 |
| 1879-80 | 63,540 | 16,581 79 | 137,681 | 137,681 | 23,611 64 | ..... | 765 | 374 08 | ..... | 46,335 | 9,298 53 | ..... | 64,396 69 | 228,379 | 0 28 197 |
| 1880-1 | 44,351 | 12,385 85 | 87,118 | 87,118 | 33,363 71 | ..... | 2,317 | 673 44 | ..... | 47,326 | 9,306 57 | ..... | 45,439 46 | 180,085 | 0 25 252 |
| 1881-2 | 79,640 | 18,626 87 | 143,616 | 143,616 | 32,966 93 | ..... | ..... | ..... | ..... | 68,535 | 11,080 37 | ..... | 61,347 15 | 216,031 | 0 28 331 |
| 1882-3 | 48,565 | 13,422 70 | 157,560 | 157,560 | 49,050 58 | ..... | ..... | ..... | ..... | 79,790 | 13,353 05 | ..... | 67,500 00 | 260,716 | 0 25 800 |
| 1883-4 | 47,058 | 17,103 88 | 76,104 | 76,104 | 25,240 73 | ..... | ..... | ..... | ..... | 55,075 | 8,608 01 | ..... | 73,509 01 | 281,368 | 0 27 957 |
| 1884-5 | 68,506 | 14,874 63 | 56,790 | 56,790 | 21,482 65 | ..... | 8,125 | 3,997 59 | ..... | 142,432 | 16,349 66 | ..... | 62,386 08 | 268,359 | 0 32 793 |
| 1885-6 | 69,440 | 11,432 80 | 58,400 | 58,400 | 21,482 65 | ..... | ..... | ..... | ..... | 6,137 | 10,214 74 | ..... | 46,706 54 | 128,977 | 0 33 56 |
| 1886-7 | 9,252 50 | 16,598 08 | 84,175 | 84,175 | 23,847 00 | ..... | ..... | ..... | ..... | 3,775 | 5,899 90 | ..... | 43,288 79 | 138,102 | 0 32 58 |
| 1887-8 | 63,633 | 16,598 08 | 56,910 | 56,910 | 22,821 55 | ..... | ..... | ..... | ..... | 24,240 | 15,502 95 | ..... | 45,000 00 | 144,783 | 0 27 29 |
| 1888-9 | 86,068 | 20,544 93 | 59,783 | 59,783 | 22,821 55 | ..... | ..... | ..... | ..... | 31,422 | 11,085 39 | ..... | 64,798 03 | 177,273 | 0 30 71 |
| 1889-90 | 96,588 | 20,375 06 | 61,698 | 61,698 | 24,386 57 | ..... | ..... | ..... | ..... | 19,004 | 8,843 92 | ..... | 53,605 55 | 177,290 | 0 30 23 |
| 1891-2 | 73,028 | 20,592 85 | 81,993 | 81,993 | 27,376 08 | ..... | ..... | ..... | ..... | 31,382 | 12,788 67 | ..... | 60,757 27 | 188,398 | 0 32 249 |
| 1892-3 | 108,035 | 20,742 29 | 40,834 | 40,834 | 18,125 58 | ..... | ..... | ..... | ..... | 61,585 | 15,112 83 | ..... | 56,980 67 | 215,354 | 0 26 44 |
| 1893-4 | 59,715 | 21,564 37 | 59,581 | 59,581 | 28,694 99 | ..... | ..... | ..... | ..... | 41,536 | 12,269 24 | ..... | 62,498 59 | 198,622 | 0 31 46 |
| 1894-5 | 48,905 | 21,352 63 | 36,428 | 36,428 | 15,828 89 | ..... | ..... | ..... | ..... | 48,090 | 10,428 90 | ..... | 58,261 71 | 218,238 | 0 26 38 |
| 1895-6 | 203,375 | 31,030 80 | 84,735 | 84,735 | 22,080 46 | ..... | ..... | ..... | ..... | 36,360 | 10,259 93 | ..... | 47,481 45 | 171,093 | 0 27 65 |
| 1896-7 | 157,325 | 27,611 17 | 147,085 | 147,085 | 31,497 57 | ..... | ..... | ..... | ..... | 51,078 | 10,937 62 | ..... | 67,068 94 | 339,788 | 0 19 73 |
| 1898-9 | 105,038 | 23,315 82 | 36,628 81 | 36,628 81 | 15,510 | ..... | ..... | ..... | ..... | 46,710 | 10,701 49 | ..... | 69,810 23 | 381,120 | 0 18 31 |
| 1899-1900 | 175,935 | 26,232 46 | 132,093 | 132,093 | 27,589 22 | ..... | ..... | ..... | ..... | 94,364 | 14,537 73 | ..... | 73,228 34 | 311,068 | 0 23 50 |
| 1900-1 | 295,399 | 32,615 29 | 94,537 | 94,537 | 36,141 17 | ..... | ..... | ..... | ..... | 26,090 | 18,984 13 | ..... | 83,359 41 | 422,332 | 0 19 76 |
| 1901-2 | 218,210 | 28,508 97 | 143,142 | 143,142 | 35,247 35 | ..... | ..... | ..... | ..... | 51,329 | 16,196 95 | ..... | 87,740 59 | 325,946 | 0 26 91 |
| 1902-3 | 137,297 | 36,195 40 | 134,648 | 134,648 | 82,856 93 | ..... | ..... | ..... | ..... | 55,943 | 16,160 33 | ..... | 85,212 66 | 387,988 | 0 20 69 |
| 1903-4 | 252,725 | 53,046 12 | 94,675 | 94,675 | 34,171 45 | ..... | ..... | ..... | ..... | 49,500 | 13,775 37 | ..... | 100,992 94 | 376,900 | 0 21 97 |
| 1904-5 | 103,955 | 46,348 80 | 293,460 | 293,460 | 33,359 47 | ..... | ..... | ..... | ..... | 33,030 | 17,123 82 | ..... | 96,832 18 | 430,445 | 0 22 49 |
| 1905-6 | 224,058 | 32,549 89 | 271,637 | 271,637 | 36,111 20 | ..... | ..... | ..... | ..... | 60,683 | 11,089 96 | ..... | 120,072 24 | 556,377 | 0 21 58 |

SESSIONAL PAPER No. 19

STATEMENT of Dredging showing Quantities removed by hand in each Province and cost of each Dredging for the Thirty-eighth Year ended March 31, 1910.

| | 1906-7. | 1907-8. | 1908-9. | 1909-10. | 31,538 51 | 176,321 | 61,284 54 | 7,360 | 58,615 | 19,047 37 | 350,031 | 111,870 42 | 0 31 96 |
|------------|-----------|---------|---------|----------|--------------|-----------|--------------|----------|-----------|------------|------------|--------------|---------|
| | 120,005 | 253,657 | 519,190 | 672,254 | 58,976 46 | 792,878 | 112,615 07 | 2,935 76 | 100,740 | 32,564 80 | 1,136,735 | 297,022 00 | 0 18 21 |
| | | | | | 120,185 39 | 274,429 | 50,117 13 | 7,755 74 | 97,730 | 39,801 00 | 908,579 | 217,860 26 | 0 23 97 |
| | | | | | 132,625 28 | | | | 113,162 | 32,765 82 | 785,416 | 165,289 10 | 0 21 04 |
| | 5,340,855 | | | | 1,118,148 31 | 4,613,072 | 1,191,059 31 | 42,785 | 1,844,730 | 507,857 62 | 11,835,462 | 2,878,525 95 | 0 24 32 |
| 1878-9. | | | | | | | 553 13 | | | | 245 | 553 13 | 2 29 58 |
| 1879-80. | | | | | | | 3,666 90 | | | | 12,370 | 3,666 90 | 0 29 64 |
| 1880-1. | | | | | | | 2,560 25 | | | | 11,140 | 2,560 25 | 0 22 98 |
| 1881-2. | | | | | | | 10,640 | | | | 10,640 | 2,650 00 | 0 24 90 |
| 1882-3. | | | | | | | 2,630 00 | | | | 8,190 | 2,500 00 | 0 30 52 |
| 1883-4. | | | | | | | 2,630 00 | | | | 5,460 | 2,500 00 | 0 43 78 |
| 1889-1900. | | | | | | | 248 71 | | | | 343 | 248 71 | 0 72 51 |
| 1890-1. | | | | | | | 240 75 | | | | 320 | 250 75 | 0 78 35 |
| 1902-3. | | | | | | | 496 83 | | | | 1,645 | 496 83 | 0 30 17 |
| | | | | | | | 15,426 57 | | | | 50,353 | 15,426 57 | 0 30 64 |

1 GEORGE V., A. 1911

'QUEBEC AND ONTARIO.

STATEMENT of Expenditure and quantities of Material removed by the different Departmental Dredges in various localities in Ontario and Quebec during the Eight Months ending November 3^d, 1909.

| Dredges. | Location. | Yards Removed. | Character of Soil. | Expendi- ture. | Cost per Yard. |
|---------------|---------------------------|-------------------|--------------------------|-------------------|-------------------|
| | | | | 8 cts. | cts. |
| Challenge | Rockland | 12,750 | Clay | | |
| | L'Original | 3,300 | " | | |
| | Grenville | 7,885 | Clay and sand | 10,069 | 03 |
| | Vaudreuil | 14,100 | Clay. | | 25½ |
| | Graham | 1,265 | Clay, boulders and | | |
| | Caughnawaga | 600 | hardpan | | |
| International | Quebec harbour | 24,750 | Sand and boulders | 20,483 | 77 |
| | St. Charles | 121,500 | " | 14 | |
| Industry | Toronto harbour | 14,750 | Sand | | |
| | Port Barwell | 105,255 | Clay, sand and mud | 21,706 | 52 |
| | Port Stanley | 54,343 | Clay, sand and stones. | 12½ | |
| Deschenes | Aylmer | 4,804 | Sand and clay | 2,734 | 84 |
| Mattawa | Sturgeon River | 53,685 | Clay and sand | 57½ | |
| | Restoule Bay | 6,600 | " | 8,427 | 35 |
| Nipissing | Black Rapids | 6,525 | Clay. | 13½ | |
| | Hog's Back | 10,790 | " | | |
| | Sterling dock, Ottawa | 375 | " | 10,561 | 92 |
| | Hawkesbury | 24,965 | Clay, gravel & boulders | 16½ | |
| | New Edinburgh | 18,745 | Sawdust and clay | | |
| | Hall | 1,350 | Sawdust and boulders. | | |
| No. 2 | Lacve River | 14,067 | Clay, gravel and stumps. | 6,706 | 02 |
| No. 3 | Papineauville | 699 | Clay. | 47½ | |
| | Pierreville | 13,270 | Sand and clay | 2,685 | 11 |
| Ontario | Pelee Island | 9,700 | Clay. | | 19½ |
| | Kingsville | 19,800 | Sand | | |
| | Port Stanley | 4,300 | Sand and clay | 7,667 | 59 |
| | Wallaceburg | 8,900 | Clay. | 17½ | |
| Ottawa | Sorel | 23,950 | Sand, stone and mud. | | |
| | Rimouski | 33,200 | Mud and clay | 14,464 | 16 |
| Progress | Levis | 2,400 | Sand | 25½ | |
| | Quebec (Louise Basin) | 16,650 | " | | |
| | St. Michel | 51,700 | Sand and boulders | 15,758 | 91 |
| | St. Jean des Chailons | 28,900 | Sand and rock | 14½ | |
| | Quebec | 11,600 | Sand and boulders | | |
| Queen | New Liskeard | 12,245 | Clay. | | |
| | Ville Marie | 2,636 | Clay and sand | 7,386 | 30 |
| | Haileybury | 724 | " | 44½ | |
| | Temiskaming | 878 | Rock, boulders & gravel | | |
| Quebec | Port Burwell | 103,020 | Clay and sand | | |
| | Niagara-on-the-Lake | 30,400 | Sand | 20,135 | 43 |
| | Hamilton | 94,600 | Clay and sand | 7½ | |
| | Brockville | 27,400 | Clay and stone | | |
| Sir Richard | Kingston | 1,800 | Sand and boulders | | |
| | Garden Island | 12,300 | Clay and sand, hardpan | | |
| | | | and gravel | 8,055 | 76 |
| | Frenchman's Bay | 23,800 | Sand | 12½ | |
| | Bowmanville | 23,700 | " | | |
| | Newcastle | 2,400 | " | | |
| St. Louis | Baie la Valliere, Yamaska | 12,744 | Clay | | |
| | Ste. Anne de Sorel | 1,165 | " | 6,154 | 00 |
| | Ile de Grace, St. Annes | 883 | " | 16½ | |
| | Berthierville | 13,404 | " | | |
| | Isles Madam | 2,271 | " | | |
| | Isles Dupas | 5,235 | Sand | | |
| | Sorel | 1,120 | " | | |

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Dredge 'Challenge.'

This dredge started work at Rockland, Ont., on June 11, and continued there up to July 15, 1909. Four cuts were made 500, 410, 160 and 145 feet long each, 25 feet wide and a depth of 6 feet at low water was made. The purpose of the work was the deepening of the approaches to the log slips in front of the saw-mill; 12,750 cubic yards of clay were removed.

Work was next performed at L'Original by this dredge between July 16 and 20, 1909. One cut 430 feet long, 25 feet wide and 6 feet deep at low water was made between the wharf and the pier in front of the saw-mill starting a channel to the log slip; 3,300 cubic yards of clay were removed.

This same dredge next worked at Grenville from July 26 to August 28, 1909. Three cuts were made between the wharfs in front of saw-mill, leading to the log slip, 700, 645 and 270 feet long each, 25 feet wide and 8 feet deep at low water; 7,885 cubic yards of sand and clay were removed.

Between August 30 and September 10 and September 20 and October 30 and November 14 to 20, 1909, this dredge performed operations at Vaudreuil, Que. Two cuts were made in front and alongside the wharf for the purpose of deepening the channel and approaches to 10 feet at low water, each 980, 955, 70, 115, 105, 100, 75, 70, 15 and 15 feet long and 25 feet wide; 14,100 cubic yards of clay were removed.

Work was next performed by this dredge at Graham, Que., between September 11 and 18, 1909. Five cuts were made 20, 90, 85, 70 and 60 feet long each and 25 feet wide in front and alongside of wharf for the purpose of deepening the approaches to 10 feet at low water. The total quantity of material removed was 1,265 cubic yards of hardpan, clay and boulders.

From November 1 to 13, 1909, this dredge worked at Caughnawaga making one cut alongside the stone wharf 45 feet long and 25 feet wide. One other cut was also started in front of the ferry wharf, 45 feet long, 25 feet wide, but could not be finished on account of encountering solid rock, which will have to be blasted; 600 cubic yards of stone, mud and clay were removed.

Dredge 'Deschenes.'

This dredge worked at Aylmer from September 13 to November 20, 1909. The work consisted in dredging a channel starting from the wharf and leading out to the main channel out in the lake. Some dredging was also done alongside the wharf deepening for the purpose of building a proposed wharf; 4,804 cubic yards of sand and clay were removed.

Dredge 'Industry.'

This dredge started work at Toronto on June 7, 1909, and continued there up to the 20th of the same month. Work consisted in making one cut on west side of Canadian Yacht Club Island, 300 feet long and 65 feet wide at bottom, and 15 feet deep at low water. One cut 225 feet long and 25 feet wide had to be made for the purpose of floating scows. 14,750 cubic yards of sand were removed.

Work was next continued by this dredge at Port Burwell from July 26 to October 6, 1909. Three cuts were made through bar outside of piers 575, 1,050 and 955 feet long each, 65 feet wide and 20 feet deep at low water. One cut was made on each side of harbour and north of Car Ferry slip dock 350 feet long, 65 feet wide and 20 feet deep at low water. One cut on west side of harbour opposite slip dock 200 feet long, 65 feet wide and 20 feet deep at low water. Seven cuts were made in turning basin 375, 450, 450, 300, 250, 200 and 40 feet long each, 65 feet wide and 20 feet deep at low water. Part of these seven cuts had to be gone over a second time owing to shoal forming by steamer wheels in towing. One other cut was also made through a shoal alongside of each pier, south of the car ferry slip, 200 feet long, 65 feet wide

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and 20 feet deep at low water. 105,255 cubic yards of mud, sand and clay were removed.

Work was next performed by this dredge at Port Stanley between October 11 and November 30, 1909. Four cuts were made in turning basin, 540, 540, 490 and 190 feet long each, 40 feet wide and 19 feet deep at low water. Two cuts outside of piers, first of those cuts 850 feet long, 60 feet wide and 20 feet deep at low water, starting 200 feet south of end of east pier. Second cut west of this, starting 100 feet in harbours, 100 feet north of end of east pier, 750 feet long, 40 feet wide and 20 feet deep at low water. One cut 190 feet long, 30 feet wide and 20 feet deep at low water commencing 100 feet north of end of east pier. 150 feet were removed off end of west pier, one cut on each side after removing this pier, 170 feet long, 30 feet wide on east side, cut on west side 40 feet wide, and one small cut between these 40 feet long. The stone removed from this pier being put on west side of breakwater and piled against breakwater with the dredge. One cut in front of east side fish company's wharf, 100 feet long, 30 feet wide and 13 feet deep at low water. One other cut at Going Fish wharf 100 feet long 30 feet wide and 14 feet deep at low water. 54,343 cubic yards of sand, clay and stones were removed from this locality.

Dredge 'International.'

This dredge worked at Quebec from May 10 to November 20, 1909. The work consisted in dredging in the new basin at St. Charles river, making a depth of 20 to 35 feet at low water for new wharf. 146,250 cubic yards of sand and boulders were removed.

Dredge 'Mattawa.'

This dredge worked at Sturgeon river from June 17 to October 10, 1909. Work performed consisted in making two cuts 2,774 and 2,037 feet long each, 25 feet wide and 12 feet deep at low water in the main channel at the entrance to this river; 53,685 cubic yards of sand and clay were removed.

Work was next performed at Restoule bay between October 11 and November 13, 1909. One cut was made starting in front of Smith's second store house 389 feet long. One other cut was made removing a shoal in channel opposite Smith's first store house 229 feet long. Both these cuts were made 25 feet wide and to a depth of 10 feet 6 inches at low water; 6,600 cubic yards of rock, boulders and gravel were removed.

Dredge 'Nipissing.'

This dredge worked at Black Rapids, Rideau canal, from May 31 to July 2, 1909. One cut was made below the locks in the main channel 372 feet long, 30 feet wide and 14 feet deep at low water; 6,525 cubic yards of clay were removed. This material was dumped behind the dam above the locks.

Work was next performed by this dredge at Hog's Back, Rideau canal, between July 8 and 24, 1909. One cut was made in the main channel 417 feet long, 30 feet wide and 20 feet deep at low water. Material dredged was used to fill in behind stop logs of the dam; 10,790 cubic yards of clay were removed.

This dredge also worked at the Sterling dock in the Ottawa river on July 30 and 31, 1909. One cut was made in front of the wharf 150 feet long and 30 feet wide and 9 feet deep at low water; 375 cubic yards of clay were removed.

Operations were continued by this dredge at New Edinburgh between August 2 and 14, also between October 18 and November 20, 1909. Six cuts were made in front of the ferry slip 343, 326, 417, 497 and 529 feet long, each 27 feet wide and 10 feet deep at low water; 18,745 cubic yards of gravel, sawdust, clay and slabs were removed.

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Work was also done by this dredge at Hawkesbury from August 16 to October 16, 1909. One cut was made from outside end of main channel into pier No. 5, 3,405 feet long, 27 feet wide and 10 feet deep at low water. One other cut from pier No. 2 to outside end of channel 782 feet long, 27 feet wide and 10 feet deep at low water. Also short cut 261 feet long, 27 feet wide and 10 feet deep at low water. This cut was made to straighten the channel, as there was a short bend at pier No. 2, also one cut 131 feet long, 27 feet wide and 9 feet deep at low water in front of Hawkesbury Lumber Company's wharf. One cut 135 feet long, 27 feet wide and 10 feet deep at low water was made between islands on proposed new channel into town of Hawkesbury; 24,965 cubic yards of clay, gravel and boulders were removed.

Work was next performed at Hull, Que., by this dredge from November 17 to 25, 1909. One cut was made 318 feet long, 27 feet wide and 8 feet deep at low water for the purpose of laying new sewer pipes. One other cut 46 feet long, 27 feet wide, was made to deepen the channel to 19 feet at low water at foot of jack ladder into mill; 1,350 cubic yards of slabs and sawdust were removed.

Dredge 'No. 2.'

From June 30 to November 13, 1909, this dredge worked in the Lièvre river. One cut was made 85 feet long, 25 feet wide and 10 feet deep at low water, on an approach to the wharf above the locks at Poupore. Seven other cuts were made above the locks, 313, 50, 135, 135, 135, 150 and 160 feet long, 25 feet wide and 10 feet deep at low water. All these cuts were made for the purpose of deepening the channel, removing shoals and material which had fallen in channel. One cut was made at the wharf seat at Notre Dame de LaSalette, 60 feet long, 25 feet wide and 6 feet deep at low water. One other cut was made below this wharf in the main channel 700 feet long, 25 feet wide and 10 feet deep; 14,007 cubic yards of clay, gravel, stone and stumps were removed.

Dredge 'No. 3.'

This dredge worked at Papineauville between September 8 and 25, 1909. Two cuts were made in front of the log slip 210 feet long each, 30 feet wide and 9½ feet deep at low water. 600 cubic yards of clay were removed.

This dredge was next taken to Pierreville Mills where she worked from September 27 to November 20, 1909. Two cuts were made in the main channel near Landry island, 750 and 900 feet long each, 25 feet wide and 7 feet deep at low water; 13,270 cubic yards of sand and clay were removed.

Dredge 'Ottawa.'

Between May 17 and July 24, and October 11 to November 6, 1909, this dredge worked at Sorel. The work consisted in deepening an approach from the main channel to the new wharf, making a depth of 30 feet at low water. 23,950 cubic yards of sand, stone and mud were removed.

This dredge also worked at Rimouski from July 26 to October 9, 1909. The work consisted in deepening main channel to 20 feet at low water, starting near the wharf and continuing out to deep water. 33,200 cubic yards of mud and clay were removed.

Dredge 'Ontario.'

This dredge worked at Pelee Island between April 19 and May 8, 1909. A cut was made for the purpose of allowing the dredge to move to deep water. 9,700 cubic yards of clay were removed.

Work was performed at Kingsville by this dredge from May 10 to September 25, 1909. Seven cuts 500 feet long, 25 feet wide and 14 feet deep at low water were

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made between the east and west piers alongside the east pier. Two other cuts were made starting from the end of east pier leading out to deep water, 130 and 50 feet long each 25 feet wide and 14 feet deep at low water. 19,800 cubic yards of sand were removed.

Dredge next worked at Port Stanley from September 27 to October 30, 1909. Two cuts were made, one 130 feet long and one 270 feet long, 25 feet wide and 21 feet deep at low water, starting from end of west dock leading to main channel in the lake. Another cut was made inside the harbour alongside west dock when weather was too rough to work outside, 130 feet long, 25 feet wide and 21 feet deep at low water. 4,300 cubic yards of sand and clay were removed.

Work was next performed by this dredge at Wallaceburg from November 1 to 30, 1909. The end of Johnston's Bend was removed for the purpose of straightening channel. One cut 230 feet long, 25 feet wide and 19 feet deep at low water was removed. 8,900 cubic yards of clay were removed.

Dredge 'Progress.'

This dredge worked at Lévis between May 10 and 15, 1909. This work consisted in removing obstructions in front of wharf; 2,400 cubic yards of sand were removed.

Between May 17 and June 5 and November 8 to 20, 1909, this dredge worked at Quebec. Obstructions were removed in front and alongside different wharfs; 28,250 cubic yards of sand and boulders were removed.

Work was next performed by this dredge at St. Michel de Bellechasse from June 7 to October 1, 1909. The work consisted in deepening the main channel leading to and from wharf; 51,700 cubic yards of clay, sand, and boulders were removed.

This dredge was next taken to St. Jean des Chaillons where she worked from October 4 to November 6, 1909, removing a shoal and deepening channel in front of government wharf; 28,900 cubic yards of sand and rock were removed.

Dredge 'Queen.'

Work was done at New Liskeard by this dredge from July 1 to August 28, 1909. The work consisted in making two cuts in the main channel, 650 and 994 feet long, 25 feet wide and 11 feet deep at low water; 12,245 cubic yards of clay were removed.

From August 30 to September 4, 1909, this dredge worked at Haileybury. One cut was made alongside of wharf so as to allow steamers to land at back of wharf, 175 feet long, 25 feet wide and 11 feet deep at low water; 724 cubic yards of sand and clay were removed.

This dredge was next taken to Ville Marie where work was done between September 6 and 18, 1909. Two cuts were made in front of wharf, 200 and 171 feet long, 26 feet wide and 9½ feet deep at low water; 2,636 yards of clay were removed.

Work was next continued at Temiskaming by this dredge from September 29 to November 30, 1909. One cut was made in front of the new dam, 266 feet long, 25 feet wide and 10 to 12 feet deep at low water; 878 cubic yards of rock, boulders and gravel were removed.

Dredge 'Quebec.'

This dredge worked at Port Burwell from April 28 to July 17, 1909. Eight cuts were made inside of piers, 550 feet long each and 35 feet wide; one other cut was made 1,000 feet long by 36 feet wide, inside of piers, starting from end of above eight cuts and leading to end of piers. Two other cuts were made, outside of piers, starting from end of piers and leading to deep water in the lake, one 700 feet and one 1,075 feet long, 40 feet wide. All the above cuts were made to a depth of 26 feet at low water; 103,020 cubic yards of silt and clay were removed.

From July 26 to September 4, 1909, the dredge worked at Niagara-on-the-Lake. Work consisted in removing three shoals which interfered with navigation. Shoal

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No. 1, 500 feet long, 114 feet wide; shoal No. 2, 300 feet long, 76 feet wide; shoal No. 3, 60 feet long, 38 feet wide. A depth of 26 feet at low water was made at these shoals. Shoal No. 1 was completely removed, while shoals Nos. 2 and 3 were only partly removed; 30,400 cubic yards of silt were removed.

Work was next performed by this dredge at Hamilton, between September 7 and October 30, 1909. A channel was dredged about 2,000 feet long by 75 feet wide, starting from end of Harvester Company's wharf and leading to deep water in the lake. One other cut was made in front of wharf, 300 feet long by 100 feet wide. Alongside of wharf, one cut 500 feet long and 50 feet wide was made and 16 feet deep at low water; 94,600 cubic yards of clay and sand were removed.

This dredge was next moved to Brockville, where she worked between November 3 and 30, 1909. One cut 850 feet long, 38 feet wide and 30 feet deep at low water was made in front of Water Works dock, coal dock, Bowie's wharf and Reynold's coal dock. The following cuts were made in front and alongside Canadian Pacific railway yard dock, 325 feet long, 30 feet wide and 18 feet deep at low water; 125 feet long, 30 feet wide, 20 feet deep at low water; 495 feet long, 30 feet wide and 20 feet deep at low water; 125 feet long, 30 feet wide and 18 feet deep at low water; 175 feet long, 36 feet wide and 18 feet deep at low water. Some cribs were also removed and a depth of 18 feet at low water was made. An old crib was also removed in front of the Canadian Pacific railway ferry dock and the channel dredged to 18 feet deep at low water. Size of crib, 125 feet long, 30 feet wide. Size of channel, 125 feet long, 30 feet wide; 27,400 cubic yards of clay and stones were removed.

Dredge 'St. Louis.'

This dredge worked at Yamaska from May 24 to July 17. One cut 3,300 feet long, 33 feet wide; one cut 3,330 feet long, 33 feet wide and $3\frac{1}{2}$ feet deep at low water, starting from opposite Ile St. Jean and going through a swamp way made for the purpose of drying up surrounding lands; 12,744 cubic yards of clay were removed.

This dredge next worked at Ste. Anne de Sorel from July 19 to 23, 1909. One cut was made 414 feet long, 28 feet wide and 3 feet deep at low water from the main channel to the beach in front of Broullord's property for the purpose of allowing boats to unload products coming from opposite shore; 1,165 cubic yards of clay were removed.

Operations were next continued by this dredge at Ile de Grace between July 26 and 31, 1909. An approach was made opposite the priest's property for the purpose of allowing boats to load products of the island. One cut 103 feet long, 28 feet wide and 3 feet deep at low water was made; 883 cubic yards of clay were removed.

Between August 2 and October 2, 1909, this dredge worked at Berthierville. One cut was made 50 feet long 30 feet wide and $3\frac{1}{2}$ feet deep at low water at the entrance of Bayonne river, to allow scow to ferry landing. One other cut was made on the opposite shore for the same purpose 453 feet long, 30 feet wide and $3\frac{1}{2}$ feet deep at low water. One other cut 5,403 feet long, 33 feet wide and $9\frac{1}{2}$ feet deep at low water was made in the main channel leading to the wharf; 13,404 cubic yards of clay were removed.

From October 5 to 16, 1909, this dredge worked at Ile Madame. One cut 350 feet long, 25 feet wide was made. The material removed was dumped on the bank for the purpose of elevating the main road; 2,271 cubic yards of clay were removed.

Work was then continued at Ile du Pas, from October 18 to November 13, 1909. One cut 975 feet long, 31 feet wide and 6 feet deep at low water was made, starting from main channel leading to the bridge for the purpose of allowing barges to load; 5,235 cubic yards of sand were removed.

This dredge next worked at Sorel between November 15 and 17, 1909. One cut 251 feet long, 33 feet wide and 10 feet deep at low water was made in front of the

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government wharf leading to the Lanetot basin; 1,120 cubic yards of sand were removed.

Dredge 'Sir Richard.'

From May 30 to June 19, 1909, this dredge worked at Garden island, also between June 25 and 29. One cut was made 2,470 feet long, 30 feet wide and 14 feet deep at low water. This work consisted in making a channel from the main channel to the wharf; 12,300 cubic yards of sand, clay and hardpan were removed.

This dredge worked next at Kingston between June 21 and 24, 1909. One cut was made alongside the locomotive works dock 110 feet long, 25 feet wide and 10 feet deep at low water; 1,800 cubic yards of sand and boulders were removed.

Dredge next moved to Frenchman's bay where she worked from July 12 to September 8, 1909. Three cuts were made 865 feet long each, one next the other giving a channel of the above length by 90 feet wide and a depth of 14 feet at low water, next to the breakwater and leading from the lake to the wharf and elevator inside the bay; 23,800 cubic yards of sand and stones were removed.

Dredge was next moved to Bowmanville where she worked from September 10 to November 10, 1909. A channel was made at the entrance and between the piers 750 feet long, 100 feet wide with a bell-shaped entrance giving a width at the outer end of 300 feet. A depth of 14 feet at low water was made; 23,700 cubic yards of sand and gravel were removed.

Operations were next performed at Newcastle by this dredge between November 11 and 18, 1909. One cut was made in the channel between the breakwater and the lighthouse, 325 feet, long, 30 feet wide and 14 feet deep at low water; 2,400 cubic yards of sand were removed.

STATEMENT of Expenditure and Quantities of Material Removed by the Different Dredges under Contract at Various Locations in Ontario and Quebec, during the eight months ending November 30, 1909.

| Dredges. | Location. | Yards Re- moved. | Character of Soil. | Ex- penditure. | Cost, Per Yd. |
|---|---------------------------------------|---------------------|--------------------------|-------------------|------------------|
| | | | | 8 cts. | cts. |
| 'Arnoldi,' W. L. Horton..... | Kincardine | 11,780 | Sand and mud..... | 4,180 00 | 35½ |
| | Goderich | 31,173 | Boulders, sand and clay. | 13,971 85 | 44½ |
| 'Algonquin,' Genl Const. Co. | Chicoutimi..... | 15,594 | Sand, clay and gravel... | 5,842 25 | 37½ |
| | Saguenay River... | 97,015 | Sand and clay..... | 32,031 13 | 33 |
| 'Capital,' Dufresne, Turcotte & Marchildon | Batiscan | 32,192 | Sand and clay | 5,531 19 | 17½ |
| | Doncets Landing | 8,886 | Hardpan and sand | 1,734 50 | 19½ |
| 'Chief,' W. E. Phin..... | Port Hope | 26,716 | Sand and mud..... | 5,940 87 | 22½ |
| | Cobourg | 66,794 | Sand and clay | 10,236 22 | 15½ |
| | Whitby..... | 43,120 | Sand, mud and clay..... | 5,273 16 | 12½ |
| 'Central City,' Cohen & Son... | Hudson..... | 5,910 | Rock and hardpan..... | 1,569 30 | 26½ |
| | St. Placide | 21,730 | Clay | 4,671 95 | 21½ |
| Duke of York,' W. J. Poupore Co..... | Louiseville | 22,514 | Clay and sand..... | 5,432 46 | 24½ |
| 'Dominion,' Gt. Lakes D'g. Co. | Port Arthur | 68,169 | Clay and sand | 17,835 94 | 26½ |
| | Mission River..... | 1,036,682 | Clay and sand..... | 164,880 64 | 15½ |
| 'Excelsior,' Can. D'g & Const. Co..... | Tiffin | 99,686 | Clay, sand and gravel... | 76,154 35 | 76½ |
| | Victoria Harbour.. | 147,588 | Boulders and rock | 28,340 31 | 19½ |
| 'E. Hall,' Cape Breton D'g Co. | Rondeau..... | 35,003 | Sand and clay | 11,732 49 | 33½ |
| | Port Burwell..... | 18,712 | Sand and clay..... | 7,423 68 | 39½ |
| 'Enterprise,' Gt. Lakes D'g Co. | Port William, G. T.P. Basin..... | 311,498 | Clay and sand | 79,431 08 | 25½ |
| 'Frank,' A. F. Bowman..... | Owen Sound..... | 2,369 | Clay..... | 800 00 | 27½ |
| 'Frank,' Gt. Lakes D'g Co ... | Kaministiquia & Mission River..... | 105,036 | Clay | 18,348 06 | 17½ |

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STATEMENT of Expenditure and Quantities of Material Removed, &c.—Continued.

| Dredges. | Location. | Yards Removed. | Character of Soil. | Expendi- ture. | Cost Per Yd. |
|--|-----------------------------------|--------------------------------------|--------------------|-------------------|----------------------------------|
| | | | | \$ cts. | \$ cts. |
| 'Hacket', Penetang Dredging Co..... | Fesserton..... | 95,295 Sand and clay..... | | 14,845 68 | 0 15 ³ / ₈ |
| 'Kenuaquhair', W. E. Phin..... | Port Arthur..... | 314,089 Clay and sand..... | | 40,875 82 | 0 13 |
| 'Little Giant', Cohen & Son..... | Rigaud..... | 30,862 Clay and hardpan..... | | 7,636 68 | 0 24 ³ / ₈ |
| 'Monarch', Can. Dredging & Const. Co..... | Victoria Harbour..... | 143,611 Clay, sand, gravel..... | | 44,019 73 | 0 30 ³ / ₈ |
| 'Meade', C. S. Boone Dredging & Const. Co..... | Tiffin..... | 91,680 Boulders and rock..... | | 60,885 53 | 0 66 ³ / ₈ |
| | Little Current..... | 4,728 Rock..... | | 5,985 24 | 1 26 ³ / ₈ |
| 'Mogul', Cohen & Son..... | St. Placide..... | 10,360 Clay..... | | 2,227 40 | 0 21 ³ / ₈ |
| | St. Pierre les Becquets..... | 26,882 Hardpan and clay..... | | 7,841 03 | 0 29 ³ / ₈ |
| 'Moose', Rainy River Dredging Co..... | Rainy River..... | 57,144 Clay and sand..... | | 14,636 15 | 0 25 ³ / ₈ |
| 'No. 1', A. F. Bowman..... | Sault Ste. Marie..... | 23,569 Rock, boulders &c..... | | 71,535 91 | 3 03 ³ / ₈ |
| 'No. 5', Great Lakes Dredging Co..... | Port Arthur..... | 40,603 Clay and sand..... | | 10,660 78 | 0 26 ³ / ₈ |
| | Mission & Kamistiquia Rivers..... | 686,701 Clay and sand..... | | 111,460 97 | 0 16 ³ / ₈ |
| 'No. 6', Great Lakes Dredging Co..... | Nipigon River..... | 45,638 Sand..... | | 20,629 30 | 0 45 ³ / ₈ |
| | Mission River, G.T.P. Basin..... | 457,824 Clay..... | | 72,033 84 | 0 15 ³ / ₈ |
| 'No. 6', C. DeSerres..... | Verdun..... | 32,335 Hardpan and boulders..... | | 11,063 78 | 0 34 ³ / ₈ |
| 'No. 8', Great Lakes Dredging Co..... | Port Arthur..... | 18,177 Clay..... | | 4,750 02 | 0 26 ³ / ₈ |
| | Mission & Kamistiquia River..... | 505,658 Clay and sand..... | | 109,034 87 | 0 21 ³ / ₈ |
| 'No. 9', Can. Dredging & Const. Co..... | Victoria Harbour..... | 147,975 Clay and mud..... | | 19,102 41 | 0 12 ³ / ₈ |
| 'No. 14', C. S. Boone Dredging & Const. Co..... | Little Current..... | 31,995 Rock..... | | 55,465 17 | 1 73 ³ / ₈ |
| 'No. 15', Great Lakes Dredging Co..... | Port Arthur..... | 55,281 Sand and clay..... | | 14,533 06 | 0 26 ³ / ₈ |
| | Mission River..... | 194,692 Clay, sand and rock..... | | 106,319 35 | 0 54 ³ / ₈ |
| 'No. 3', Dominion Dredging Co. | L'Assomption..... | 26,005 Clay and boulders..... | | 4,519 59 | 0 17 ³ / ₈ |
| 'Prince Willie', W. J. Poupore Co..... | Yamaska..... | 23,341 Sand and clay..... | | 4,280 63 | 0 18 ³ / ₈ |
| | River du Loup (en bas)..... | 16,298 Clay..... | | 7,429 80 | 0 45 ³ / ₈ |
| | River St. Francis..... | 1,112 Sand and clay..... | not passed | | |
| | Yamachiche..... | 29,106 Mud and clay..... | | 4,377 89 | 0 14 ³ / ₈ |
| 'Pontiac', W. J. Poupore..... | St. Francis River..... | 26,135 Clay..... | | 4,782 30 | 0 18 ³ / ₈ |
| | Yamaska..... | 3,277 Clay..... | | 603 86 | 0 18 ³ / ₈ |
| | River du Loup (en haut)..... | 6,633 Clay and sand..... | | 1,425 93 | 0 21 ³ / ₈ |
| 'Pelletier'..... | Napanee River..... | 20,000 Sand, gravel and mud..... | | 2,840 25 | 0 14 ³ / ₈ |
| 'Sydenham', Can. Dredging & Const. Co..... | Victoria Harbour..... | 439,246 Clay, sand and boulders..... | | 56,825 33 | 0 12 ³ / ₈ |
| 'St. Lawrence', Manley..... | Point Edward..... | 82,234 Sand and gravel..... | | 14,968 62 | 0 18 ³ / ₈ |
| | Wallaceburg..... | 20,952 Clay and sand..... | | 4,898 16 | 0 23 ³ / ₈ |
| 'St. Pierre', A. St. Pierre..... | St. Maurice River..... | 216,950 Clay and sand..... | | 22,187 00 | 0 10 ³ / ₈ |
| 'Trenton'..... | Telegraph & Nigger Island..... | 5,798 Rock..... | | 17,678 80 | 3 04 ³ / ₈ |
| 'Wingfield', C. S. Boone Dredging & Const. Co..... | Wingfield Basin..... | 4,904 Rock..... | | 14,784 15 | 3 01 ³ / ₈ |

Dredge 'Capital' (Dufresne, Turcotte & Marchildon).

From June 2 to August 3, 1909, this dredge worked in the Batiscan river. One cut 3,448 feet long, 25 feet wide and 6 feet deep at low water, was made in the main channel above entrance of this river. Two other cuts were made in the main channel above the Canadian Pacific railway bridge with a total length of 1,573 feet, 25

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feet wide and 6 feet deep at low water; 32,192 cubic yards of clay and sand were removed.

This dredge was next moved to Doucet's Landing, where work was performed between August 31 and September 18, 1909. Seven cuts were made with a total length of 986 feet, 24 feet wide and 13 feet at low water, in front of the wharf; 8,886 cubic yards of hardpan and sand were removed.

Dredge 'Central City' (L. Cohen & Sons).

From July 17 to August 17, 1909, this dredge worked at Hudson. Two cuts were made 380 feet long each, 27 feet wide and $9\frac{1}{2}$ feet at low water, deepening an approach to shore to load barges; 5,910 cubic yards of boulders and hardpan were removed.

Work was next performed at St. Placide by this dredge from September 28 to October 16, 1909. Work consisted in dredging around and in front of the wharf leading to the main channel. Three cuts were made with a total length of 950 feet, 26 feet wide and 10 feet deep at low water; 21,730 cubic yards of clay were removed.

Dredge 'Duke of York' (W. J. Poupore).

From June 1 to July 29, 1909, this dredge worked at Louiseville. Thirteen cuts were made. Six 200 feet long and one 500 feet long in front of the new wharf, two 1,300 feet long in front of Tourville wharf, two 250 feet long at the boom entrance and two 140 and 100 feet long each in the main channel towards the entrance of the river. All these cuts were made to a width of 26 feet and a depth of 6 feet at low water; 22,514 cubic yards of clay and sand were removed.

Dredge 'Little Giant' (L. Cohen & Son).

From June 21 to September 8, 1909, this dredge worked at Rigaud. Two cuts were made 2,283 feet long each, 30 feet wide and 9 feet deep at low water below the Canadian Pacific railway bridge in River Rigaud; 30,862 cubic yards of clay and hardpan were removed.

Dredge 'Mogul' (Canada Improvement Company).

This dredge worked at St. Pierre les Becquets, from June 8 to July 29, 1909. Three cuts were made with a total length of 1,895 feet, and a width of 30 feet to 8 feet at low water. These cuts were made in front of the wharf leading to main channel; 26,882 cubic yards of hardpan and boulders were removed.

Work was next performed at St. Placide by this dredge from October 26 to November 20, 1909. Two cuts were made 825 feet long each, 30 feet wide and 10 feet deep at low water. This work started from the main channel leading to the wharf; 10,360 cubic yards of clay were removed.

Dredge 'No. 3' (Dominion Dredging Company).

Operations were performed from July 28 to September 17, 1909, by this dredge at L'Assomption. Six cuts were made with a total length of about 2,500 feet, 35 feet wide and 14 feet deep at low water. This work was made in the main channel crossing the Ottawa river; 26,005 cubic yards of clay and boulders were removed.

Dredge 'No. 6' (De Seres).

This dredge worked at Verdun from July 14 to November 23, 1909. Four cuts were made, two 500 feet long each and two 300 feet long each, 35 feet wide and 8 feet deep at low water. This work was performed in the main channel at foot of Ile aux Herons; 32,335 cubic yards of hardpan and boulders were removed.

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Dredge 'Pontiac' (W. J. Poupore).

This dredge worked in the St. Francis river from June 1 to 30, 1909. Two cuts 1,000 feet long each and one 306 feet long, 26 feet wide each and 6 feet deep at low water. These cuts were for the purpose of making an approach to the new wharf; 26,135 cubic yards of clay were removed.

Work was next performed by this dredge at Yamaska between July 1 and 3, 1909. The work consisted in deepening the channel close to Ile St. Jean to 6 feet deep at low water; 3,277 cubic yards of clay were removed.

Operations were next performed at Louiseville by this dredge between July 5 and 16, 1909. One cut was made opposite Voisard's property in the main channel 1,065 feet long, 26 feet wide and 6 feet deep at low water; 6,633 cubic yards of clay and sand were removed.

Dredge 'Prince Willie' (W. J. Poupore).

This dredge worked in the Yamaska river between June 3 and 30, 1909. Work consisted in cutting through a shoal at the entrance to the lock. Three cuts were made 500 feet long each, 60 feet wide and 4 feet deep at low water; 23,341 cubic yards of sand and clay were removed.

Work was also performed by this dredge at St. Francis river from July 1 to 2, 1909. A cut was made through a shoal at Mackerel point to a depth of 6 feet at low water; 1,112 cubic yards of sand were removed.

Operations were next performed by this dredge at Yamachiche from July 5 to 29, 1909. One cut was made 3,143 feet long, 55 feet wide and 6 feet deep at low water, starting from the entrance of this river leading to the main channel in Lake St. Peter; 29,106 cubic yards of mud and clay were removed.

Dredge was next removed to Rivière du Loup en Bas, where she worked from August 7 to September 2, 1909. The work consisted in deepening around and in front of the wharf; 16,298 cubic yards of clay were removed.

Dredge 'St. Pierre' (A. St. Pierre).

From May 6 to November 13, 1909, this dredge worked in the St. Maurice river. Four cuts 500 feet long each and four cuts 1,000 feet long each were made in the main channel at the foot of Baptiste island and along side of the wharf. Two cuts were also made at the head of this island in the main channel 1,000 feet long each. One cut 1,000 feet long in front of Grant's sawmill. One cut 1,000 feet long in front of Union Bay Company's wharf, and one cut 1,308 feet long in front of the mill. All these cuts were made to a width of 32 feet and a depth of from 8 to 10 feet at low water; 216,950 cubic yards of clay and sand were removed.

See resident engineer's reports for following dredges:—

- No. 9, Canadian Dredge and Construction Company.
- Excelsior*, Canadian Dredge and Construction Company.
- Sydenham*, Canadian Dredge and Construction Company.
- Monarch*, Canadian Dredge and Construction Company.
- No. 5, Great Lakes Dredging Company.
- Dominion*, Great Lakes Dredging Company.
- No. 15, Great Lakes Dredging Company.
- No. 8, Great Lakes Dredging Company.
- No. 6, Great Lakes Dredging Company.
- Enterprise*, Great Lakes Dredging Company.
- Frank*, Great Lakes Dredging Company.
- Meade*, C. S. Boone & Company.
- No. 14, C. S. Boone & Company.

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Wingfield, C. S. Boone & Company.
No. 1, A. F. Bowman Company.
Arnoldi, W. L. Horton.
St. Lawrence, Manley Dredging Company.
E. Hall, No 1, Cape Breton Dredging Company.
Chief, W. E. Phin.
Trenton, R. Weddell.
Hacket, Penetang Dredging Company.
Kinnequhair, W. E. Phin.
Frank, A. F. Bowman.
Moose, Rainy River Dredging Company.
Pelletier, Windsor Dredging Company.
Algonquin, General Construction Company.

PROVINCE OF QUEBEC.

AYLMER.

Aylmer, Wright county, is on the Quebec shore of Lake Deschenes, an expansion of the Ottawa river, 9 miles above the city of Ottawa; 4 miles from Britannia, the foot of navigation and 25 miles below Chats lake, the head of navigation. It has a population of 3,000, and an additional floating population of 1,500.

The departmental dredge *Deschenes* worked at Aylmer, September 13-November 20, making four cuts aggregating 942 lineal feet. One cut 602 feet long, 25 feet wide, to a grade depth of 9 feet, at the inner end, along the centre of the western entrance to the Ritchie wharf; two cuts, each 96 by 26 feet, to a grade depth of 9 feet, were made on the west half of the site of the proposed new wharf; a cut 150 long, 25 feet wide, to a grade depth of 9 feet, was made along the west side of the Ritchie dock, from the centre of the channel above referred to for berthing purposes; 4,802 cubic yards sand and clay, scow measure, were removed on flat scow and shovelled off in 49 feet of water $\frac{3}{4}$ of a mile out from Ritchie's dock. Work was not economical owing to limited plant.

BAIE DE LA VALLIÈRE.

Baie de la Vallière is some 6 or 7 miles east of Sorel. It empties into the Yamaska river.

The dredging begun there many years ago in order to drain the surrounding farm lands was continued in 1909 from May 24 to July 17. Some 12,744 cubic yards of earth were removed by government dredge *St. Louis* in clearing part of channel made during preceding years, and in making a new cut 1,450 feet long and 75 feet wide.

CAUGHNAWAGA.

Caughnawaga or Sault St. Louis, a post village in Laprairie county, situated on the south shore of the St. Lawrence, opposite the village of Lachine, 10 miles from Montreal and 15 miles from Beauharnois. The Canadian Pacific railway has a station here half a mile from the village called Adirondack Junction. It is entirely inhabited by the Indians of the Iroquois tribe; has Roman Catholic and Methodist churches, 13 stores, 1 lacrosse stick factory, telegraph and express offices. Population, 2,300.

From October 31 to November 13, 1909, government dredge *Challenge* worked at Caughnawaga, opposite the new government wharf; some 600 cubic yards of clay, stone and sand were dredged in removing a shoal 170 feet long and 30 feet wide.

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GRENVILLE.

Grenville village is on the Quebec shore of the Ottawa river, in the county of Argenteuil, 59 miles below Ottawa, across the river from Hawkesbury, and is at the head of the Grenville-Carillon canal.

The departmental dredge *Challenge* worked here (July 26-August 23), making three parallel cuts (815, 600 and 210 lineal feet), 25 feet wide, to a grade depth of 9 feet into the wharf slip of Dansereau's sawmill.

7,885 cubic yards of clay and sawdust, scow measure, were removed and spoiled 200 feet out and below point of Grenville canal entrance, in 30 feet of water at the head of the rapids. The work was efficiently done.

HUDSON.

Hudson, a post village in Vaudreuil county, on the River Ottawa, and on the Canadian Pacific railway (short line), 9 miles from Vaudreuil and 35 miles from Montreal. It is a landing of the Ottawa steamers and contains 1 Methodist church, 1 Roman Catholic church, telegraph, express and telephone offices, 1 woollen factory, 1 hotel and 2 stores. A favourite summer resort for Montrealers. Population, 500.

From June 12 to August 17, 1909, dredge *Central City* of Messrs. Cohen & Son, worked at Hudson some 1,250 feet northwest of public wharf, opposite the Mason and Wilson wharfs. Some 5,690 cubic yards of hard pan and boulders, and 250 cubic yards of rock were removed in making a cut 475 feet long, from 50 to 150 feet wide, and from 8 to 10 feet deep.

HULL (MAIN SEWER).

Hull, county of Wright, is an important industrial centre on the Ottawa river, opposite the city of Ottawa.

The departmental dredge *Nipissing* worked to improve the main sewer outlet of the city of hull on the Ottawa river, November 17-22.

1,930 cubic yards sawdust, boulders and clay, scow measure, were removed to a grade depth of 10 feet in 259 lineal feet of cutting.

HULL (E. B. EDDY'S).

Hull, county of Wright, is an important industrial centre on the Ottawa river, opposite the city of Ottawa.

The departmental dredge *Nipissing* worked at the E. B. Eddy sulphite mill, Hull, on the Ottawa river, November 23-25, making 46 lineal feet of cutting to a grade of 10 feet, and removing 990 cubic yards of sawdust and bark, scow measure.

This work was for the removal of shoaling which has taken place over the pulp log basin of the company.

ILE AU CASTOR.

Ile au Castor is one of the many islands in the St. Lawrence between Sorel and Berthierville. It is situated immediately opposite Berthierville.

From July 29 to August 11, 1909, government dredge *St. Louis* worked in the channel south of the island separating it from the Ile du Pads. This in order to accommodate the ferry service between the two islands. A cut 384 feet long from 35 to 45 feet wide and from 3 to 4 feet deep was made; some 2,247 cubic yards of sand being removed.

ILE DE GRÂCE.

Ile de Grâce is one of the many islands in the St. Lawrence between Sorel and Berthierville. It is situated immediately opposite Ste. Anne de Sorel, with which it communicates with a ferry.

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From July 24 to 28, 1909, government dredge *St. Louis* took out some 434 cubic yards of earth in making a 2-foot channel 125 feet long and 25 feet wide, to accommodate the light ferry service to Ste. Anne de Sorel.

ILE ST. IGNACE DE LOYOLA.

St. Ignace de Loyola, post village and parish, in Berthier county, on the St. Lawrence river, close to the western end of Lake St. Peter, and $2\frac{1}{2}$ miles from Berthierville station, on the Canadian Pacific railway, and Sorel, on the opposite bank of the St. Lawrence, in Richelieu county. It contains a Roman Catholic church and 1 store. Population of parish, 875.

From October 5 to November 6, government dredge *St. Louis* worked at Ile St. Ignace de Loyola near Ile Madame and Ile du Pads. A dyke some 400 feet long and 17 feet wide was made so as to allow communication between Ile Madame and Ile St. Ignace.

Material dredged, 6,546 cubic yards of clay and sand.

LA SALETTE.

La Salette, a village in Labelle county, is on the east bank of the Lièvre river, 18 miles above Buckingham.

The departmental dredge *No. 2* worked at La Salette, on the Lièvre river (September 27-November 13), making 720 lineal feet of cutting to a grade depth of 10 feet, to improve the channel for a minimum width of 6 feet; a distance of 1,000 feet, along the east shore through the landslide to the site of the proposed landing, also 222 lineal feet of cutting in the east bank, to a grade depth of 6 feet, for a landing slip at the foot of a public roadway. Total of 4,757 yards (scow measure) clay were removed.

To supplement the dredging, some blasting was done from October 14 to 22, 1909, above the water level to ease off the landing slip of the berth for the float landing.

LONG SAULT DAM.

The Long Sault rapids are on the interprovincial boundary at the foot of Lake Timiskaming, near Timiskaming station, where it narrows into Seven League lake, 39 miles above Mattawa, which latter is a station on the Canadian Pacific railway main line at the confluence of Seven League lake and the Mattawa river, into the Ottawa river.

At this point, a dam is being constructed to form part of the Upper Ottawa storage system.

The departmental dredge *Queen* worked here (September 26-November 19), making 291 lineal feet of cutting to a grade depth of 7 feet, removing 878 cubic yards of rock, boulders, sand and hard-pan (scow measure).

This work has been directed by the engineer of construction and is being done by the department to help, as much as possible, the early completion of this link of the Upper Ottawa storage scheme.

PAPINEAUVILLE.

Papineauville, Labelle county, is a town of some importance, on the Quebec shore of the Ottawa river, 37 miles below Ottawa city, on the Canadian Pacific railway north shore line.

The departmental dredge *No. 3* worked at Papineauville (September 8-18) to complete a slip to Messrs. Ball & Sons mill. Two parallel cuts, 70 and 58 lineal feet respectively, were made to an average depth of 8 feet; 600 cubic yards of clay (scow measure) were removed.

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This work was done during the experimental trials of the new dredge and was handicapped by the delays to which a new plant is subject.

POUPORE.

Poupore is a post station on the east shore of the Lièvre, 12 miles above Buckingham, in the county of Labelle.

The departmental dredge No. 2 worked here (June 30-September 25), making five cuts aggregating 936 lineal feet, to improve the eastern channel for a distance of 1 mile below locks.

9,785 cubic yards of clay, scow measure, was removed to a grade depth of 10 feet. Part of the dredged material had to be cast over.

The channel is now in fairly good shape but there is a possibility that local landslides from the steep east bank will again occasionally obstruct the inner channel. It is proposed to dredge around the toe of said landslides, as has been successfully done during the past season, instead of through the landslides as has been customary. While this was necessary to prevent the blocking of navigation for an extended period, the experience gained has proved that greater and worse undermining usually follows.

The work was much delayed by loose logs and cribbed logs coming down the narrow channel and preventing the dredge from working. A week's time was lost by the sudden rise of the river (3 feet), in August, the dredge not being equipped with the proper length of dipper arm and spuds.

RIMOUSKI.

During the fiscal year ended March 31, 1910, the departmental dredge *Ottawa* was engaged from the beginning of August to the month of October, in lengthening and deepening the 15 foot channel required at Rimouski, to permit the mail tender *Lady Evelyn* to perform her service without any delay or interruption.

The quantity of material removed amounted to about 26,500 cubic yards consisting of clay, sand and small boulders.

The length of channel dredged during the season, was 650 feet by a width of 120 feet and the mean depth of clay excavated was 6 feet.

During the summer 1908, the dredge *Progress* did the shore part of the channel and although the dredging is far from being completed at Rimouski, nevertheless the state of things is much improved and last summer not the least delay was experienced by the mail tender on account of low water.

RIVER BERTHIER (NEAR BERTHIERVILLE).

Berthierville (Berthier-en-haut), a thriving river port and incorporated town in Berthier county, on the shore of the St. Lawrence, and a station on the Canadian Pacific railway. It contains 2 churches (Roman Catholic and English), 20 stores, 3 hotels, 2 sawmills, branches of the Provincial and Hochelaga banks, 1 waterworks, 1 convent, 1 college, 1 grammar school, 1 ladies' seminary, and telegraph and express offices and Melcher's gin distillery.

Population, 1,364.

From August 12 to October 2, 1909, government dredge *St. Louis* worked in River Berthier channel, nearly opposite Berthierville. Some 11,606 cubic yards of clay were removed in making a cut 1,700 feet long, 25 feet wide, and down to 10 feet below extreme low water level.

RIVIÈRE DU LOUP (EN BAS).

During the season 1909-10, a contract was let to the W. J. Poupore Company, Limited, of Montreal, to perform some dredging near the outer end of the wharf.

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The clam shell *Prince Willie* was engaged on that work from August 7 to September 2.

16,298 cubic yards of material were removed from the inside of the 'L' of the wharf, providing a depth of 7 or 8 feet at low water spring tides.

The material removed was silt and soft clay.

The amount expended on dredging at Rivière du Loup was \$7,429.80.

RIVER L'ASSOMPTION.

Charlemagne, a post village in L'Assomption county, 4 miles from Mascouche and 12 miles from Montreal. It has 4 stores, 1 sawmill, 1 box factory, telegraph and express office, and 3 hotels. Population, 722.

From July 28 to August 30, and from September 9 to 17, 1909, the Dominion Dredging Company's dredge *No. 3*, worked at the entrance of River l'Assomption, opposite Charlemagne, between Bourdon island and Repentigny Point. The 14-foot channel begun some years ago, was widened and cleared. Material removed, 26,005 cubic yards of clay and boulders.

RIVER RICHELIEU.

Richelieu, a river of Quebec, leaves Lake Champlain at its north extremity, and after a northerly course of 80 miles enters the River St. Lawrence at Lake St. Peter. It is broader and more rapid in the upper than in the lower part of its course. Near its centre, it expands into the Basin of Chambly. The Richelieu forms an important part of the navigation between the St. Lawrence and the Hudson rivers. At its mouth is the town of Sorel.

The important improvements begun in River Richelieu near St. Johns last year, were continued in 1909.

Dredging operations were resumed in May with the government dredge *Richelieu*, and the rented dredges *Lanark* and *Maberley*. Work was done between the Central Vermont and Jones bridges. Channel dredged 750 feet wide. On November 20, when work was suspended, the dredges were up to Jones' bridge. Following quantities of material, mostly clay with some gravel and a little hard-pan and boulders, having been dredged:—

| | Cubic Yards. |
|----------------------------|--------------|
| <i>Richelieu</i> | 45,216 |
| <i>Maberley</i> | 57,779 |
| <i>Lanark</i> | 54,419 |
| Total | 157,414 |

Average cost per yard, 30 cents.

Distance advanced, 1,000 feet.

All material excavated was dumped on the east shore of the river at a distance of from 0 to 1½ miles above Central Vermont railway bridge.

Between April and June, two wooden side-dumping scows, 70 feet long, 22 feet wide and 28 inches draught, were built; weight, nearly 100 tons each. Repairs were made to steam derrick used with the dumping boxes. The government tug *Ottawa*, 65 feet long and 14½ feet wide, was almost entirely renovated, the entire hull being rebuilt in 2½-inch oak and the machinery improved. The Iberville water intake near public wharf, was also lengthened 264 feet so as to prevent interference by dredging. Cost, \$600.

During January, February and March, dredge *Richelieu* was repaired. Work was begun on the installation of a small swing bridge on Jones' bridge, so as to allow the passing of the dredges, tugs and scows working between Jones' and the Canadian Pacific railway bridges.

Total expenditure for fiscal year was \$59,988.85.

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RIVER RIGAUD.

From June 17 to December 8, 1909, L. Cohen & Son's dredge *Little Giant* worked in River Rigaud. Channel was dredged and cleared to 8 feet for a width of 100 feet and a length of 3,500 feet, starting 3,500 feet below Canadian Pacific railway bridge and going down stream. Some 30,862 cubic yards of clay, boulders and hardpan were removed.

RIVER ST. LOUIS.

St. Louis de Gonzague, a post settlement in Beauharnois county, Que., 1 mile from St. Louis station, on the Ottawa and Swanton branch of the Grand Trunk railway. It contains 2 churches, 4 stores, and 1 butter and cheese factory. Population, 250; of parish, 1,200.

The improvements to River St. Louis, begun in 1904 and pursued since, were resumed in June, 1909, and suspended November 20, until next year. During fiscal year, 17,454 cubic yards of clay, gravel and hardpan were dredged, and 2,089 cubic yards of solid rock blasted and removed. Total expenditure, 1909-10, was \$6,454.42.

These improvements are being done in order to prevent or at least greatly minimize the disastrous effects of spring floods and overflows after heavy rain.

Work was done by day labour.

LAKE ST. JOHN.

Dredging at Roberval, Lake St. John, is done by dredge *Lac St. Jean*, assisted by tug *Marie-Louise*.

For details of dredging plant, see Report Public Works, 1906-7, page 200.

The dredge has been working at Roberval harbour in and out at Rivière à la Pipe, around the wharf, and at St. Gédéon les Îles for the site of a wharf.

The work done during the fiscal year 1909-10 was the continuation of the dredging in the entrance, and in the Roberval harbour, also at Rivière à La Pipe.

Number of cubic yards dredged, 9,390.

Amount expended, \$5,093.29.

Dredging started on July 12, at Roberval; on July 26 the dredge went to St. Félixien with the tug *Marie-Louise* to help the steamer *Pikouagami*, which was ashore, and back to Roberval on the 30th; on September 2, the dredge went to Rivière à La Pipe, and was back at Roberval on the 30th, where the dredge was placed in winter quarters.

STE. ANGÈLE DE LAVAL.

From August 31 to September 18, 1909, Messrs. Dufresne & Marchildon's dredge *Capital* worked immediately in front of the Doucet Landing Grand Trunk railway wharf used by the Three-Rivers ferry boat; some 1,840 cubic yards of hardpan and 7,036 cubic yards of sand and boulders were removed.

STE. ANNE DE SOREL.

Ste. Anne de Sorel, a post village attractively situated on Lake St. Peter, an expansion of the St. Lawrence river, in Richelieu county, 3 miles from Sorel, a station on the Quebec, Montreal and Southern railway. It has one Roman Catholic church, 3 stores, and 1 flour mill. Population of parish, 1,046.

From July 19 to 23, 1909, Government dredge *St. Louis* worked at Ste. Anne de Sorel about 1 mile downstream from public wharf. This in order to accommodate the ferry between Ste. Anne de Sorel and Ile de Grâce opposite. A 2-foot channel some 300 feet long and from 30 to 40 feet wide was made and 1,165 cubic yards of sand and clay removed.

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ST. JEAN DES CHAILLONS.

During and after construction of present government wharf at St. Jean Des Chaillons, it was found that its channel of approach was very much obstructed by unaccountable shallow patches with only 4, 6, 9, 10 and 12 feet of water at low tide, alongside of deep water of from 15 to 20 feet and more.

On investigating, the cause of it was found that when the dredging of the ship channel at Cap à la Roche was transferred by the Montreal Harbour Commissioners to the Department of Public Works of Canada, in or about 1889-90, the officials of the latter made a dumping ground of the locality, which was the local harbour at the time, destroying it altogether, leaving scarcely 7 feet of water, where formerly 30 feet existed not 350 feet from high water line.

Last season, a government dredge was to work around the wharf in July or August; however, the government dredge *Progress* reached Des Chaillons only on Saturday, October 2, starting work on Monday the 4th, and was hurried away on the following November 6. In this interval, five working days were lost through some breakage in the machinery and boiler of dredge.

Of the remaining 28 days, five were Sundays and holiday (November 1), leaving 23 working days during which dredge worked 152 hours or equal to 19 days of eight hours; the balance of time was taken up by coaling of dredge, moving of same, waiting for scow to go and return from dumping ground, as only one scow of a capacity of 100 yards was being used during the whole time.

The material removed: broken stone, already crushed by previous dredging, gravel and earth washed in among the stone with a certain amount of sand, amounted to 234 scow loads, or, say 23,400 cubic yards, while some 4,948 yards were cast over. Some six cuts of irregular lengths and depths, owing to the formation of the several heaps, were made, the whole however averaging 1,954 feet in length, 8 feet deep and 50 feet wide.

ST. JOSEPH DE SOREL.

St. Joseph de Sorel, a post vilalge and parish in Richelieu county, on the South Shore railway, and on the Richelieu and St. Lawrence rivers, at the southwest end of Lake St. Peter, the port of call for the steamers of the Richelieu and Ontario Navigation Company. The village contains the shops of the Department of Marine and Fisheries for the construction and repairs of government vessels and barges, employing 700 workmen. It contains also 1 Roman Catholic church, 4 stores, 2 saw and flour mills. Population of parish, 1,400.

From May 27 to June 30, and from October 11 to November 6, 1909, government dredge *Ottawa* worked on the western entrance of River Richelieu near St. Joseph de Sorel. Some 23,950 cubic yards of clay, stone and sand were removed in widening said entrance 400 feet by from 200 feet to 550 feet and down to 18 feet below extreme low water level.

ST. PIERRE LES BECQUETS.

St. Pierre les Becquets, a post village and parish in Nicolet county, on the St. Lawrence, 4 miles from Batiscan, on the Canadian Pacific railway, 19 miles east of Three-Rivers. It contains 1 Roman Catholic church, 10 stores, 2 temperance hotels, 1 carding mill, 2 saw mills, 4 grist mills, 1 tomato canning factory, besides a large convent with 70 pupils, also express and telegraph offices. Population of parish, 1,900.

From June 8 to July 29, 1909, Messrs. Cohen & Son's dredge *Canada* worked at St. Pierre. A 10-foot cut 1,620 feet long, from main channel, and 30 feet wide was made. The basin adjoining public wharf was also deepened. Total quantity dredged was 23,352 cubic yards of clay and hardpan, and 3,530 cubic yards of sand.

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ST. PLACIDE.

St. Placide, a post settlement in Two Mountains county, 10 miles from Ste. Scholastique, on the Montreal and Ottawa (North Shore) branch of the Canadian Pacific railway. It contains a Roman Catholic church, 4 stores, 1 hotel, 2 wagon factories, 1 carriage factory and 1 butter factory. Population, 400.

From September 20 to November 20, dredge *Central City*, and from October 26, to November 20, dredge *Canada Mogul*, both belonging to Messrs. L. Cohen & Sons, worked in the downstream channel leading to wharf at St. Placide. Said channel was cleared to 10 feet and widened on a length of 5,500 feet. Some 32,300 cubic yards of clay were removed.

SAGUENAY RIVER.

Saguenay dredging is done at the Chicoutimi harbour and in the channel, so as to complete the channel from the harbour to foot of Les Battures, about 9 miles from Chicoutimi.

Work done during the fiscal year 1909-10 was the continuation of the dredging of the harbour and in the channel.

Work started on June 28, 1909, and was resumed on November 15; the dredging in the harbour was in front of the old wharf, and in front of the extension is to an average depth of 18 feet.

Material removed in the harbour was clay, 15,594 cubic yards.

The dredging in the channel was done to an average depth of 18 feet; material removed was clay, and 99,385 cubic yards were removed. The dredging was done in line of No. 2, or Rivière Valin range light, for a total length of 2,800 feet by 90 feet in width.

| | |
|---|-------------|
| Amount expended in the harbour. | \$ 1,677 88 |
| Amount expended in the channel. | 30,000 00 |
| Total of cubic yards. | 114,979 |

SOREL.

From November 11 to 20, 1909, government dredge *St. Louis* widened the eastern entrance to Bassin Lanctot, immediately inside of the L-shaped high level wharfs at Sorel. A cut 251 feet long, 30 feet wide and down to 7 feet below low water level was made, and 2,080 cubic yards of sand and clay removed.

VAUDREUIL.

Vaudreuil, a post village and parish in Vaudreuil county, on the Ottawa river, with port on the Lake of Two Mountains, and on the Canadian Pacific railway and Grand Trunk railway, 24½ miles from Montreal. It contains 1 Roman Catholic church, 6 stores, 4 hotels, 2 flour mills, &c., besides telephone, telegraph and express offices. Population of parish, 1,510.

From August 29 to October 30, and from November 14 to November 20, 1909, government dredge *Challenge* worked in the 10 foot channel leading from Ottawa river to public wharf at Vaudreuil. Some 15,515 cubic yards of clay and hard-pan were removed.

VERDUN.

Verdun, an incorporated village in Jacques-Cartier county, lying to the southwest of the city of Montreal, and separated from it by the tail race of the Montreal waterworks, and 1 mile from St. Paul station, on the Grand Trunk railway. It contains 4 churches (Roman Catholic, Anglican, Presbyterian, and Methodist), a number of stores, a large laundry, ice-house, 1 hotel, the Protestant hospital for the

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insane, 1 branch bank and a large seminary. A ferry runs to La Tortue on the south side of the St. Lawrence, and there is a good electric car service to Montreal. Population, 5,000.

From September 20 to October 30, and from November 11 to November 23, 1909, Mr. Gaspard Desserres' dredge *No. 6*, worked in the channel between Verdun and Côte Ste. Catherine. A 9-foot channel 100 feet wide and 900 feet long was cleared, and 32,335 cubic yards of boulders and hard-pan were removed.

VILLE MARIE.

Ville Marie, Pontiac county, is an agricultural centre of importance, located on Baie des Pères, Lake Timiskaming.

The departmental dredge *Queen* worked here (September 6-18), making two parallel cuts, each 185 lineal feet, to improve the turning basin in front of the public wharf.

2,616 cubic yards, scow measured, clay, were removed to a grade depth of 10 feet and spoiled in deep water opposite the harbour.

PROVINCE OF ONTARIO.

BELLEVILLE.

Belleville, Hastings county, is situated on the north shore of the Bay of Quinté. Population, 11,000. It is the county town.

On August 24 last, authority was given to have the Windsor Dredging Company, dredge the necessary excavation for the accommodation of the Ontario Fisheries Inspection boat *Navarch* to a depth of 10 feet, for the sum of \$300.

The material removed consisted of stiff mud, sawdust, hard heads, and the quantity removed amounted to 972 cubic yards, which were all over-cast to the south of the slip.

This work commenced August 25, and was completed August 27.

Total expenditure for fiscal year, 1909-10, was \$300.

BLACK RAPIDS.

Black Rapids lock is on the Rideau canal, in the county of Carleton, 9½ miles from Ottawa and 4 miles from Hog's Back.

The departmental dredge *Nipissing* worked here (May 31 to July 3), removing 6,525 cubic yards clay (scow measure), under the supervision of Rideau canal officers.

The full cost of the above work is placed at \$1,700.

A recommendation was made July 22, in a memo. to the deputy minister, that an account covering disbursements on account of running expenses only, be rendered to the Department of Railways and Canals.

BOWMANVILLE.

Bowmanville, (or Port Darlington) Durham county, is situated on the north shore of Lake Ontario, 43 miles east of Toronto by rail on the main line of the Grand Trunk railway, between Toronto and Montreal. Population, 2,800.

This harbour was built by the municipality and consists of two parallel piers at the mouth of a small creek. The west jetty is 800 feet in length by 30 feet in width except at the outer end where it is 60 feet in width for a length of 240 feet.

The departmental dredge *Sir Richard* was engaged at this place from September 6 to November 6, and excavated some 23,000 cubic yards of material, scow measurement, in improving the channel between the piers and the approaches.

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GARDEN ISLAND.

Garden Island is situated at the east end of Lake Ontario, opposite the city of Kingston in the county of Frontenac.

The departmental dredge *Sir Richard* was employed from May 31 till June 27, and excavated a channel 2,500 feet in length by 30 feet in width to a depth of 14 feet and in the performance of this work some 13,400 cubic yards of material, scow measurement, were removed.

GODERICH.

On June 1, 1909, authority was received to expend the sum of \$5,000 in performing necessary dredging in inner harbour; in channel between piers, and in channel at outer entrance to piers. This amount was subsequently increased by \$660 and \$12,500 on June 28 and September 18, 1909, respectively, making the total grant for dredging during the past season \$18,160.

The contract for the above dredging was re-let to Mr. W. L. Horton, of Goderich, at the prices which prevailed during the previous year, i.e., 35 cents for all material other than rock, and \$4 per cubic yard, scow measurement, for rock.

Operations were commenced on June 11 and ceased on December 14, 1909, when work closed down for the winter. Work was suspended between August 31 and September 21 owing to first grant having been expended. 34,568 cubic yards of clay, sand and gravel and 710 cubic yards of rock were removed, the greater portion of which material was dredged at outer entrance to harbour. The dredging performed to date has proved of great benefit, but practically the whole of the inner harbour requires to be dredged to a depth of at least 21 feet below extreme low water level in order to accommodate the rapidly increasing traffic.

The total expenditure during the fiscal year 1909-10 is \$20,047.16.

HAILEYBURY.

Haileybury, district of Nipissing, is on the west shore of Lake Timiskaming and is the chief lake port on the route of the Timiskaming and Northern Ontario railway, 108 miles north of North Bay and 5 miles from Cobalt, the heart of an important mineral district.

The departmental dredge *Queen* worked at Haileybury from August 27 to September 4, making a cut 155 lineal feet, 30 feet wide, to a grade depth of 10 feet, to improve the wharfage at the Haileybury dock, on Lake Timiskaming.

972 cubic yards clay and sand were removed and spoiled a short distance away in deep water. This work has improved considerably, for the time being, the congested wharfage.

HAWKESBURY.

Hawkesbury, Prescott county, is a town of 4,600 population, situated on the Ottawa river, at the head of the Grenville-Carillon canal and 58 miles below Ottawa. The Hawkesbury Lumber Company and the Riordan pulp mills are the chief industries at this point.

The departmental dredge *Nipissing* worked at Hawkesbury, on the Ottawa river (August 9-October 16) making 6 cuts aggregating 4,624 lineal feet, 27 feet wide, completing the outer channel into the Hawkesbury harbour and improving the approaches to the Hawkesbury Lumber Company's dock, also testing the material in the proposed channel for a second entrance in the harbour.

28,690 cubic yards of clay, boulders and hard-pan (scow measure) were removed and spoiled either in deep water above the extensive sand shoal or at the head of the rapids.

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The outer channel is now from 100 to 150 feet in width for a least depth of 10 feet throughout its length, $\frac{3}{4}$ mile. The trial dredging performed in the proposed new channel has shown that the work cannot be performed by the average dredge without blasting.

HOG'S BACK.

Hog's Back lock is on the Rideau canal, in the county of Carleton, $5\frac{1}{2}$ miles from Ottawa.

The departmental dredge *Nipissing* was loaned to the Department of Railways and Canals for widening the channel at Hog's Back, under the supervision of the Rideau canal officers. The dredge worked (July 5-31), removing 10,780 cubic yards stones.

The full cost of the above work is placed at \$750.

A recommendation was made July 22, in a memorandum to the deputy minister, that a bill covering disbursements on account of running expenses only, be rendered to the Department of Railways and Canals.

KINCARDINE.

Kincardine is a prosperous town situated on the east shore of Lake Huron, in the county of Bruce, 39 miles south of Southampton and 32 miles north of Goderich. It is the terminus of the Wellington, Grey and Bruce division of the Grand Trunk railway. Population, about 3,000. Principal industries of the town are: two furniture factories, salt works, and boiler and machine works. It is the principal summer resort on the east shore of Lake Huron. It is a harbour of refuge and possesses facilities for both imports and exports, either by water or rail; principal imports are coal, wood, lumber, fence posts, ties and fish; principal exports are salt, furniture, iron bridges, boilers, &c. It is a port of entry and a regular port of call for a line of packet freight steamers running between Lake Huron ports and Sault Ste. Marie. The average draught of vessels entering this harbour is 12 feet. The dredging performed annually provides a minimum draught of 14 feet below L.W.L.

The Penetangore river, which empties into this harbour, is the source of more or less continual trouble as exemplified during the past spring freshet when a large amount of material was brought down in solution and deposited in the harbour, more particularly in the channel between piers, thus increasing the required outlay during the coming season to provide sufficient depth of water to accommodate the traffic.

On May 11, 1909, authority was received to place at work the dredging plant owned by Mr. W. L. Horton, of Goderich, providing he agreed to work at the rate of last year's contract (i.e., 35 cents per cubic yard, scow measurement, for all material except rock) if renewed or at such rate as might result if new tenders were called for.

The above plant was ordered to proceed with the work and operations were commenced on May 15, and were continued until June 17, when the grant arranged for this work had become expended. Subsequently, on May 31, authority was received to perform an additional week's dredging on condition that the contractor would await payment until next session; this work was performed, and in all consisted of the widening and deepening of channel at outer entrance to harbour, to depths of 16 and 18 feet below L.W.L.; two cuts to a depth of 14 feet below L.W.L. between piers; one cut along easterly and southerly side of inner harbour to a depth of 14 feet below L.W.L., and one cut along northerly side of inner harbour to a depth of 12 feet below L.W.L. In the performance of this work 11,780 cubic yards of clay, sand and gravel were removed.

KINGSVILLE.

Kingsville is a thriving town situated on the north shore of Lake Erie, in the county of Essex, about 25 miles east of the mouth of the Detroit river, and on the

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line of the Pere Marquette railway. An electric railway line also runs through this place, between Windsor and Leamington. Population, about 1,800. It is the centre of a very rich farming country; an important harbour of refuge, and is the principal point from which the steamers, carrying freight and passengers, run regularly to Pelee Island, Sandusky and Windsor; a large fishing trade is carried on at this point; the main traffic over the docks is lumber, fence posts, and general building materials.

On June 14 last, operations were commenced by the government dredge *Ontario* in dredging in inner harbour to a depth of 14 feet below L.W.L., and work was continued until September 4 last when dredge was ordered elsewhere.

The work performed consisted of the dredging of the area adjoining and opposite easterly dock in harbour, of an average length of 500 feet and width of 200 feet, also two cuts on the easterly side of entrance to harbour with an average length of 200 feet.

In the performance of the above work 14,400 cubic yards of sand were removed, and the work done left this harbour with a minimum depth of 14 feet below L.W.L. available for any boats calling at this point, with sufficient turning room in inner harbour.

L'ORIGINAL.

L'Original, Prescott county, is on the south shore of the Ottawa river, 54 miles below Ottawa on the Canadian Northern railway. It contains, besides the county buildings, 4 churches, 1 télégraph office, several insurance agencies, grist and saw mills, 3 stores and 3 hotels. Population, 1,000.

The departmental dredge *Challenge* worked here July 17-24, 1909, making a cut 430 feet long, 25 feet wide to a grade depth of 4 feet, parallel to and a short distance west of the wharf.

3,300 cubic yards of clay, scow measure, were removed, but cut remains unfinished as work was discontinued for sake of economy on account of dredge making cut deeper than required owing to her needing so much working depth. In other words making a 4-foot cut below water which is only intended to float saw logs to the Côté & Cie saw mill jack-ladder; work will be resumed at high water stage in 1910.

MIDLAND (TIFFIN).

Midland (Tiffin), Simcoe county, is a town of some 5,000 inhabitants, situated on an arm of the Georgian bay. It is the terminus of the Midland division of the Grand Trunk railway. Large quantities of lumber are shipped from this place, and there is a large smelter in operation.

Including Tiffin, there are three large grain elevators having a total capacity of 4,000,000 bushels, of which the Grand Trunk Pacific railway elevator has 2,000,000 and the others 1,000,000 each.

At the last session of parliament, the sum of \$125,000 was appropriated for dredging at Tiffin, and on May 4 last, authority was given to proceed with the work, same to be performed by the Canadian Dredge and Construction Company, at the following prices per cubic yard, scow measurement: boulders, \$2.25; other material, 29 cents; bucket measurement, boulders, \$1.75; other material, 22 cents.

Work was commenced May 6 and suspended for the season November 16 and consisted in dredging in slip to Grand Trunk Pacific elevator, the outer portion of which is 1,600 feet in length varying in width from 276 feet to 312 feet, also dredging a slip 500 feet in length, immediately in front of the elevator, 80 feet in width, all to a depth of 25 feet.

During the season, the dredges removed some 41,324 cubic yards of rock and 150,024 cubic yards other material.

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Total expenditure for fiscal year, 1909-10:—

| | |
|--|--------------|
| To be paid Canadian Dredge and Construction Company. | \$136,526 46 |
| To paid inspection. | 555 03 |
| | <hr/> |
| | \$137,081 49 |

NAPANEE.

Napanee, Lennox and Addington county, is situated on the Napanee river, some 6 miles from where it empties into the Bay of Quinté. A number of manufactures are located at this place. Population, 3,200.

On September 2 last, authority was given to have the Windsor Dredging Company perform certain dredging on this river at the rate of 14 cents per cubic yard, scow measurement, for which the sum of \$3,000 was authorized.

Work was commenced September 9 and completed October 6, and consisted in dredging to a depth of 12 feet below low water at various points in the river where most required; the cuts varying in width from 25 to 75 feet. The upper cut is 1,600 feet in length and 25 feet in width and the lower one is 750 feet in length by 75 feet in width.

The dredge removed some 20,000 cubic yards of other materials.

An old wreck lying in the channel was removed.

Total expenditure for fiscal year 1909-10 is \$2,990.25.

NEWCASTLE.

Newcastle, Durham county, is situated on the North shore of Lake Ontario, 47 miles east of Toronto. It contains large woollen mills, a tannery and an implement factory. Population, 700.

The departmental dredge *Sir Richard* was at this place from November 10 to about the 19th and dredged one cut 365 feet long by 25 feet wide and about 3 feet 6 inches in depth and in so doing removed some 3,100 cubic yards of other materials, scow measurement.

NIPIGON RIVER.

Dredging was resumed at the mouth of this river on May 19, and the contract was completed on June 12. The quantity of material removed was 45,638 cubic yards, chiefly sand, and the expenditure, including inspector's salary, is \$20,629.30.

The length of the channel dredged is 1,690 feet and the width 200 feet with a depth of 19 feet.

NEW EDINBURGH.

New Edinburgh is a ward of Ottawa city, but while Ottawa proper lies in Carleton, New Edinburgh lies in Russell, the Rideau river being the intersecting line.

The departmental dredge *Nipissing* worked at New Edinburgh, near the mouth of the Rideau river, on the Ottawa (August 2-7, and again October 18-November 16) making six cuts aggregating 2,188 lineal feet by 27 feet wide to a grade depth of 10 feet, and removing 14,880 cubic yards saw-dust and clay, scow measure, to improve 700 feet of wharfage for the Gatineau ferry and W. C. Edwards and Company, Limited.

The spoil was deposited in part to restore the bank of the Ottawa immediately below the mouth of the Gatineau river where a slip occurred last spring.

NEW LISKEARD.

New Liskeard, in the district of Nipissing, is located at the mouth of the Wabibi river on Lake Timiskaming. For years, dredging has been done to maintain navigation at this important point.

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The departmental dredge *Queen* worked at New Liskeard, on Lake Timiskaming, June 22-August 28, making a cut of 1,139 lineal feet, 25 feet wide, to flatten the curve in the outer channel, also a cut of 375 lineal feet to improve the outer channel at the entrance; 12,376 cubic yards clay, scow measure, was removed to a grade depth of 11 feet and spoiled in deep water.

The work was delayed somewhat by the poor condition of the fuel supply at this point, and the interference of logging operations at the mouth of the Wahbi river.

NIAGARA.

Niagara-on-the-Lake, Lincoln county, is situated near the mouth of the Niagara river.

The departmental dredge *Quebec* worked from August 2 till September 3 removing some 28,800 cubic yards of other materials, scow measurement, from the shoals that existed in the vicinity of the Bell Buoy some 3 miles out in the lake, northerly, on the course of the regular passenger steamers between Toronto and Niagara.

OTTAWA.

The departmental dredge *Nipissing* worked at the foot of the Rideau locks, on the Ottawa river, July 30-31, removing spiles, stone and ballast along a portion of the Sterling dock, owned by the Canadian Pacific railway and leased to the Ottawa Forwarding Company.

One cut 115 feet long and 20 feet wide was made, and 375 cubic yards stone and gravel were removed. The greatest part of the spoil was cast over into the repaired wharf for filling.

PELEE ISLAND (WEST DOCK).

Peele Island is situated on the western end of Lake Erie, in latitude $41^{\circ} 46' N.$, longitude $28^{\circ} 45' W.$, about 35 miles southeast from the mouth of the Detroit river, and 16 miles south of the town of Kingsville, Essex county. Population of the island, about 650. The products of the island are grapes, wine, fruit, and farm produce. The soil is particularly rich and fertile. A large number of hogs are raised. Owing to the isolated position of this territory, the docks on this island are of very great importance and service to the inhabitants. A regular line of steamers calls between three and four times a week when weather permits. Deep draught fishing tugs call daily and carry a large amount of fish to the mainland. In addition to the exportation of the above-named products of the island, lumber, shingles, coal, flour, machinery and general merchandise were brought in over this dock. It is a port of entry. Traffic is increasing steadily. Maximum draught 11 feet.

On June 29, 1909, authority was received to expend the sum of \$2,800 in bank protection work at northerly end of this island, the work to be performed by the Chatham Dredging and General Contracting Company, of Chatham, Ontario, at the rate of 10 cents per cubic yard, bank measurement, and which amount was subsequently increased by the sums of \$1,600 and \$500 on August 23 and October 6, 1909, respectively, making a total grant of \$4,900. The work performed under the two last grants was at the rate of 6 cents per cubic yard, bank measurement.

The work performed consisted in the construction of 7,566 lineal feet of embankment, with an average height of 9 feet above ground level, width at base about 30 feet, and width across top of embankment 12 feet. Yardage entailed excavating and over-casting of 62,500 cubic yards of loam, sand and clay. Owing to the striking of a bone of rock on the construction of the easterly embankment, which reaches to a level of about 2 feet 6 inches above L.W.L., it was found necessary to have the dredge return and cut through from a point on westerly embankment a distance of 1,500 feet to the easterly embankment, in order to avoid the latter. It was found unnecessary to construct any embankment across the 200 feet where rock existed.

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The construction of this embankment has proved of immense advantage in providing protection to the lands lying in rear, and which were, before construction of this work, suffering from the heavy seas which break upon the shoreline of this island.

Total expenditure during the fiscal year 1909-10 is \$10,285.66.

PICKERING.

Pickering, formerly known as Frenchman's Bay, Ontario county, is situated on the north shore of Lake Ontario, 21 miles east of Toronto.

The departmental dredge *Sir Richard* worked from July 12 till September 8 removing from the entrance, between the piers, and alongside the landing pier in the harbour some 23,800 cubic yards of other materials, scow measurement.

POINT EDWARD.

Point Edward is situated at the head of, and on the easterly side of the St. Clair river, in the county of Lambton, adjoining the town of Sarnia, and is 61 miles west of London. It is the terminus of the Grand Trunk railway. It is a port of entry and is the principal port of call for the five steamers of the Northern Navigation Company, which load and unload at the spacious Grand Trunk Railway Company's freight sheds. An extensive unloading plant is in use at this place, in connection with the unloading of iron ore for the Hamilton Iron and Steel Works. The amount of ore brought from the upper lake ports during the season of 1909 was approximately 300,000 tons. The large Grand Trunk elevator handled during the season of 1909 approximately two and a half million bushels of grain. An enormous amount of package freight is handled by the Northern Navigation Company, also a large amount of timber and coal were brought in during past season. The annual revenue has reached as high as \$200,000.

Nearly all vessels entering this port have a draught of from 17 to 21 feet.

On June 1, 1909, authority was received to commence dredging, contract for same having been re-let to the Manley Company, of Toronto, at the rate of 18 cents per cubic yard, scow measurement, for all materials other than rock, and \$1 per cubic yard, scow measurement, for rock. The expenditure was limited to \$15,000.

Operations were commenced on June 3 and continued until August 11, 1909, when work was completed.

The work performed consisted of the dredging to a depth of 22 feet below L.W.L. on different locations opposite the docks and along a frontage of 3,700 feet, also opposite the area lying between the Cleveland-Sarnia dock and the Sarnia Lumber Company's dock, to a depth of 16 feet below L.W.L. The completion of this work left a minimum depth of 21 feet below L.W.L. along the entire frontage of these docks with a greater depth on an average prevailing, and which work included the removal of the middle ground between the Point Edward docks and the deep water channel on westerly side of river. The removal of this middle ground has been practically in progress for four years, and it is anticipated that the work performed during that period will eliminate, to a very great extent, the difficulty experienced in past years, through the rapid and regular accretions forming along the frontage of these docks.

In the performance of the above work, 82,234 cubic yards, scow measurement, of sand and gravel were excavated at a total cost, during the fiscal year 1909-10, of \$14,998.52.

PORT HOPE.

Port Hope, Durham county, is situated on the north shore of Lake Ontario, 63 miles east of Toronto, on the Grand Trunk railway. The chief trade is in lumber and grain. It has a number of important industries. Population, 5,000.

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On June 2 last, authority was given to expend the sum of \$6,160 in dredging, the work to be performed by Mr. W. E. Phin at the following prices per cubic yard, scow measurement: rock, \$2.40; other materials, 22 cents.

Work was commenced June 5 and completed June 26.

The work consisted in dredging at the entrance to the piers to a depth of 12 feet and a width of 125 feet and a length of 175 feet, also two shoal spots, one about 50 by 50 feet and the other about 170 feet and an average width of 25 feet, all to a depth of 12 feet.

In doing this work some 26,716 cubic yards of other materials were removed.

On June 15 last, authority was given to expend the sum of \$3,400 in repairs to the piers by day labour.

Work was commenced September 7 and carried on till December 21 and then from March 15 to 31.

The work consisted in the placing of large stone along the east side of the east pier for a length of 395 feet and a width of 13 feet, also along the lake shore for a distance of 50 by 12 feet in width, and the renewal of 175 feet of the decayed portion of the east pier on the east side of the harbour in concrete, and renewing the decking, where necessary.

In doing this work some 12,831 f.b.m. pine, 8,000 f.b.m. hemlock, 200 lbs. iron, 53½ cubic yards of concrete blocks complete, 80 cubic yards stone and 575½ tons stone were used.

Total expenditure for fiscal year 1909-10 is \$9,340.95.

PORT STANLEY.

Between October 4 and 8 last, the government dredge *Ontario* was employed in dredging at entrance to the car ferry slip also in inner harbour, and from October 14 until November 30, 1909, the government dredge *Industry* was employed in excavating in inner harbour, to a depth of 19 feet below L.W.L., the widening and deepening of outer entrance to harbour of an area approximately 925 feet long and 115 feet wide, to a depth of 21 feet below L.W.L., as also in the removal of 150 feet of outer end of westerly pier. The stone removed from this latter work was utilized as rip-rap along the outer face of breakwater, and where erosion was found to have occurred. On March 23, 1910, the government dredge *Industry* resumed operations at northerly end of inner harbour, dredging to a depth of 16 feet below L.W.L. and was still at work at the end of the fiscal year. A small portion of the material excavated was dumped along inner and outer faces of breakwater for protection to same; 82,236 cubic yards of clay and sand were removed.

RESTOULE BAY.

Restoule Bay, Parry Sound district, on the south side of the French river, which latter is southwest of North Bay, across Lake Nipissing. Important lumbering operations are carried on at this point.

The departmental dredge *Mattawa* worked in Restoule Bay, French river, October 11 to November 16, making two cuts 229 lineal feet and 389 lineal feet by 30 feet wide at the entrance and inside the bay, respectively.

6,600 cubic yards boulders, gravel and rock deposit, scow measure, were removed to a grade depth of 10 feet, and cast over or spoiled in the adjacent deep water. This work was performed to facilitate the scowing of supplies, &c., on heavy lumbering operations. Owing to the low stage of Lake Nipissing waters, it was necessary, in operating the dredge, to dig two feet more than required by the traffic.

RONDEAU.

Rondeau, Kent county, is an important harbour of refuge and port of entry, situated on Pointe Aux Pins, about 19 miles south of the city of Chatham and 45

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miles west of Port Stanley. It is a favourite summer resort and the terminus of the Sarnia and Rondeau branch of the Pere Marquette railway. Population, about 100.

In the inner harbour and at westerly side along coal dock, a modern and extensive coal handling plant is used by the Lake Erie Coal Company for unloading coal from their boat which runs regularly between this point and Conneaut, Ohio. During the past season, 165,000 tons of coal were brought in by this company, and on the greater portion of which a duty of 53 cents per ton is collected.

It is a port of call during the summer season for the passenger steamer running to Cleveland. Fishing tugs work from this point.

On June 1, 1909, authority was received to proceed with dredging at this point, expenditure to be limited to the sum of \$5,940 and work to be performed by the Cape Breton Dredging Company, of Toronto, at the price of 33 cents per cubic yard, scow measurement, for all materials except boulders. This grant was supplemented by an additional grant of \$5,800 on July 8 last. Active operations commenced on June 3 and ceased on July 28, during which period 35,000 cubic yards of clay, sand and gravel were excavated.

The work performed consisted of the dredging of a channel at outer entrance to piers 150 feet wide with an average length of 400 feet and to a depth of 21 feet below L.W.L., also the partial dredging of a turning basin in inner harbour to a depth of 20 feet below L.W.L.

ROCKLAND.

Rockland is a town of some 2,000 population on the south shore of the Ottawa river, 22 miles below Ottawa. It has connection with the city by Grand Trunk railway, Canadian Northern railway and by boats. The chief industry here is the Edwards saw mills, whose operatives make up the majority of the population.

The departmental dredge *Challenge* worked at Rockland, on the Ottawa river, June 11-July 15, making five cuts 25 feet wide, aggregating 1,110 lineal feet to improve the log slips of the W. C. Edwards & Co., Limited, saw mill.

12,750 cubic yards clay and sawdust, scow measure, were removed to a grade depth of 5 feet and spoiled in deep water close by. This work was slightly delayed by the handling of logs but has proved of great benefit as a relief to the shoal conditions which recently proved embarrassing to the owners of the important industry at this point.

SAULT STE. MARIE.

Sault Ste. Marie, district of Algoma, is situated at the head of St. Mary's river, which connects Lake Superior with Lake Huron. Population, 10,500. It is on the main commercial route from the Great West to the sea-board. The tonnage passing through the 'Soo' canals during 1908 amounted to some 9,594,941 through the Canadian lock and 21,487,499 through the American locks.

At the last session of parliament, the sum of \$55,000 was appropriated for dredging, and on April 17 last, authority was given to proceed with the work, which was to be performed by Mr. A. F. Bowman at the following prices per cubic yard, scow measurement: rock, \$3.15; boulders, \$1.50; other materials, 57 cents.

This work commenced April 17 and closed for the season on November 9.

The work consisted in the construction of a channel 200 feet in width extending from the government wharf westerly until it intersects the ship channel to the canal on the Canadian side, also the removal of a number of shoal spots in the approach to the government wharf from the east.

During the season, some 20,252 cubic yards of rock, 1,064 cubic yards boulders and 2,250 cubic yards of other materials were removed.

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Total expenditure for fiscal year 1909-10 is:—

| | |
|------------------------------|-------------|
| <i>Re repairs</i> | \$ 163 47 |
| <i>Re dredging</i> | 71,505 91 |
| | <hr/> |
| | \$71,669 38 |

STURGEON FALLS.

Sturgeon Falls, a town of 1,400 population, is on the Canadian Pacific railway main line, 24 miles west of North Bay, and lies on the Sturgeon river 5 miles from the mouth where it enters Lake Nipissing. The departmental dredge *Mattawa* worked near Sturgeon Falls improving the outer channel of the mouth of the Sturgeon river in Lake Nipissing, June 21-October 10, making two parallel cuts, 2,031 and 2,774 lineal feet respectively.

53,685 cubic yards sand and clay, scow measure, were removed to a grade depth of 13 feet and spoiled outside the entrance in a direction to prevent silting back from prevailing wind storms. Owing to the exposed location of this channel, much silting, however, takes place, hence the maximum depth of dredging. The channel is now in a fairly good condition.

SYDENHAM AND CHENAL ECARTÉ RIVERS.

Sydenham river has its outlet in the Chenal Ecarté river, the passage between St. Anne Island and the mainland. From its mouth to Wallaceburg is a large navigable stream; above this point it divides into two branches, north to Wilkesport 14 miles and east to Dresden 15 miles.

Chenal Ecarté takes its rise in the River St. Clair and flows in a tortuous route in a southeasterly direction to within a short distance of Wallaceburg where it joins the Sydenham river, then flows in a southerly direction into Lake St. Clair. With the exception of a few locations, the river is sufficiently wide and deep to permit canal sized boats, with a draught of 18 feet, to proceed from St. Clair river to the town of Wallaceburg. During the season of 1908, 193 vessels utilized this route; the number of vessels utilizing it during the past season was slightly in excess of that of 1908, maximum draught of same being 16 feet. It is used particularly for the importation of beets and raw sugar to the beet sugar factory at Wallaceburg, also for coal, wood, building materials, &c. The imports are rapidly increasing and figure as an important item in the large customs revenue collected at Wallaceburg.

By the improvement of the Chenal Ecarté river between Wallaceburg and the St. Clair river it is anticipated that not only the quantity of material imported will be largely increased but that a trade direct with the west, over this route, will be established.

On September 16, 1909, authority was received to expend an amount of \$2,500 in the improvement of the Sydenham river, dredging to be performed by the Manley Company, of Toronto, at the rate of 23 cents per cubic yard, scow measurement.

Work was performed between September 30 and October 7, 1909, and consisted in the removal of a small knoll close to the town of Wallaceburg, the widening of channel of river for a length of 550 feet in the vicinity of the junction of the Sydenham and Chenal Ecarté rivers, to a depth of 19 feet below ordinary water level; the removal of a portion of the point of land on the northern side of the Chenal Ecarté river at Johnson's bend, and which point makes a dangerous bend for vessels of any size to swing around.

Departmental arrangements have been made for the purchase of 200 feet of that portion of point on northerly side of river, at Johnson's bend, required for improvements at that point. The intention is to have this and other work required in this river, completed during the coming season by the government dredge *Ontario*.

In the performance of the above work, some 6,780 cubic yards of clay were excavated, and in addition a number of sunken logs were removed.

1 GEORGE V., A. 1911

Between November 8 and 27, 1909, the government dredge *Ontario* was employed on the widening of a channel in this river, and during that time two cuts of an average length of 170 feet each to a depth of 19 feet below L.W.L. were made on the north side of the Chenal Ecartè river, approximately $3\frac{1}{2}$ miles west of the town of Wallaceburg, removing 8,600 cubic yards, scow measurement, of clay and sand.

Total expenditure during fiscal year 1909-10 is \$1,631.56.

TELEGRAPH ISLAND.

Telegraph Island is situated in the Bay of Quinté, about $13\frac{1}{2}$ miles east of Belleville. It is a small rocky island on which a lighthouse is located. The channel is immediately to the north of the lighthouse, and is comparatively narrow, with a rocky bottom.

At the last session of parliament, the sum of \$15,000 was appropriated for dredging, and on June 1 last, instructions were given to have the work performed by R. Weddell at the following prices per cubic yard, scow measurement: boulders, \$3; other materials, 95 cents; bucket measurement, boulders, \$2.50; other materials, 65 cents.

Work was begun on June 9 and closed for the season September 24, and consisted in the excavation of a cut 1,100 feet in length by 100 feet in width at the bottom, and to a depth of 15 feet below zero of gauge or extreme low water. Of this work, the entire area has been drilled, and one cut 28 feet in width has been dredged the entire length, and a second cut for about two-thirds of the length.

A further sum of \$2,788 was authorized on September 18 last in order that one cut might be completed for the entire length.

In doing this work, some 5,798 cubic yards of rock were removed.

Total expenditure for fiscal year 1909-10 is \$17,678.80.

VICTORIA HARBOUR.

Victoria Harbour, Simcoe county, is situated on an inlet of the Georgian bay, at the eastern end thereof, and is a well sheltered harbour easily approached from the open lake. Population, 1,500. There are extensive saw mills at this place, and it is to be the principal terminal of the Canadian Pacific railway, which has constructed a 2,000,000 bushel grain elevator and is constructing large concrete wharfs.

At the last session of parliament, the sum of \$150,000 was appropriated for the continuation of the dredging, and on May 4 last, authority was given to have the Canadian Dredge and Construction Company proceed with the work at the following prices per cubic yard, scow measurement: boulders, \$2.25; other materials, $12\frac{1}{2}$ cents; bucket measurement, boulders, \$1.75; other materials, 11 cents.

Work was commenced May 6 and carried on until December 6, and consists in the construction of a slip, which when completed will be 600 feet in width by about 5,500 feet in length and 25 feet in depth.

During the season, the dredges removed 30,592 cubic yards of rock and 882,264 cubic yards of other materials.

Total expenditure for fiscal year 1909-10 is \$180,979.26.

WALLACEBURG.

Wallaceburg, Kent county, is a prosperous town situated on the Sydenham river and on the line of the Pere Marquette railway distant by rail 24 miles from the city of Chatham and 31 miles from the town of Sarnia. Population, about 3,000. It is a port of entry. It possesses several large and successful industries, such as a beet sugar factory, glass factory, &c., and the revenue collected on raw sugar brought to the beet sugar factory last season approximately amounted to \$275,000.

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On July 6, 1909, authority was received to dredge approximately 10,000 cubic yards of material in providing a turning basin in the Sydenham river opposite the Wallaceburg Sugar Company's factory, work to be performed by the Manley Company, of Toronto, at the rate of 23 cents per cubic yard, scow measurement.

Work was performed between August 16 and 27, 1909, and consisted of the providing of a turning basin, approximately 240 feet long, 130 feet wide, with a depth of 19 feet below L.W.L., also the dredging out of a slip, 70 feet wide and to the same depth as the outer turning basin. 14,172 cubic yards of clay were removed at a total expenditure during the fiscal year, 1909-10, of \$3,293.60.

WAUBAUSHENE.

Waubauskene, Fesserton and Coldwater, Simcoe county, with respectively, 1,500, 1,000 and 1,500 inhabitants, are situated on Matchedash bay, an arm of the Georgian bay, at the southerly end thereof.

On June 1 last, authority was given to expend the sum of \$19,000 in dredging, the work to be performed by the Penetanguishene Dredging Company at the following prices per cubic yard, scow measurement: rock, \$3.50; other materials, 15 cents; bucket measure, rock, \$3.75; other materials, 14 cents. Out of the amount mentioned above, \$13,000 was for work between Fesserton and Coldwater, and \$6,000 was for the removal of rock near Waubauskene.

The work between Fesserton and Coldwater was commenced June 10 and closed for the season November 13, and consisted in the excavation of a cut 4,400 feet in length by 30 feet in width and 10 feet deep.

The rock excavation was not commenced at Waubauskene owing to inability, claimed by the contractors, of securing a necessary drill and plant.

During the season, some 92,205 cubic yards other materials were removed.

Total expenditure for fiscal year 1909-10 is \$14,766.43.

WINGFIELD BASIN.

Wingfield Basin, Bruce county, is situated on the northeast end of the Bruce peninsula, on the west side of Georgian bay, a short distance northwest of Cabot's Head, about 41 miles north of Wiarton and 18 miles from Tobermory. It is within 1½ miles of the course of all vessels sailing from ports on Lakes Superior and Huron. The basin itself is nearly circular and is a natural, well sheltered harbour about 1½ miles in diameter having a depth of from 12 to 22 feet over mud and rock except at the southeast end where it is shoal for a distance of 500 or 600 feet out from shore. The basin lies between Boulder and Middle Bluffs, these being two of the cliffs forming what is known as Cabot's Head.

On June 2 last, authority was given to expend the sum of \$15,000 in dredging, the work to be performed by the C. S. Boone Company at the following prices per cubic yard, scow measurement: rock, \$3; other materials, 75 cents; bucket measurement, rock, \$3; other materials, 70 cents.

Work was commenced June 7 and closed for the season July 8 and consisted in removing portions of rock that were drilled and blasted the previous year along the centre of the channel to give a uniform width of 100 feet when completed and a depth of 16 feet below ordinary water level.

In doing this work some 4,904 cubic yards of rock were removed.

Total expenditure for fiscal year 1909-10 is \$14,814.15.

1 GEORGE V., A. 1911

ANNUAL Report from April 1, 1909, to March 31, 1910.

DREDGE 'CHALLENGE,' OWNER, DEPARTMENT OF PUBLIC WORKS.

| Localities where Dredging was performed. | DATE. | | Depth of Water made below zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|-------------|-----------|---------------------------------|----------------------|--------------|----------------------|
| | From | To | | | | |
| Rockland, Russell Co. | June 11. | July 15. | 4-5 feet. | 12,750 | | |
| L. Original, Prescott Co. | July 16. | July 24. | 4-5 " | 3,300 | | |
| Grenville, Argenteuil Co. | July 26. | Aug. 23. | 8 " | 7,885 | | |
| Vaudreuil, Vaudreuil Co. | { Aug. 24. | Sept. 10. | " | 14,100 | 12,515 34 | 31 1/2 |
| | { Sept. 20. | Oct. 30. | " | | | |
| Graham, Vaudreuil Co. | { Nov. 14. | Nov. 20. | " | 1,265 | | |
| Caughnawaga, Lepprie Co. | Sept. 10. | Sept. 18. | 10 " | 600 | | |
| | Nov. 1. | Nov. 13. | " | | | |
| Total expenditure, \$12,515.34. Total cubic yards removed, 39,900. | | | | | | |

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|-----------------------|----------|---------|----------|---------|---------|------------|----------|-----------|-----------|------------------------------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages. | 1,021 42 | 440 19 | 467 65 | 485 16 | 490 19 | 521 33 | 475 00 | 832 42 | 619 68 | 931 81 | 6,293 85 |
| Fuel. | | 6 60 | 363 78 | 117 99 | | 933 99 | | 271 18 | | 41 85 | 1,740 39 |
| Provisions. | | 147 78 | 192 76 | 195 02 | 189 71 | 192 66 | 216 00 | 262 01 | | | 1,346 03 |
| Stores and equipment. | 237 27 | 4 35 | 152 34 | 4 14 | | 5 55 | | 25 00 | 2 75 | 137 60 | 570 00 |
| Repairs. | 535 08 | 33 15 | 597 47 | 51 69 | 91 90 | 129 95 | 171 16 | 50 55 | 4 59 | 669 08 | 2,535 02 |
| Pilotage and towage. | | | | | | | | 111 05 | | | 111 05 |
| Contingencies. | 21 20 | | | | | | | 9 25 | 21 40 | 17 15 | 69 00 |
| Totals. | 1,814 97 | 632 07 | 1,779 00 | 854 00 | 780 80 | 1,783 48 | 862 25 | 1,562 46 | 648 82 | 1,797 49 | 12,515 34 |

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Total. |
|---------------------------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Hard pan, boulders, clay and sand. | ..... | ..... | 6,800 | 11,010 | 6,225 | 5,765 | 9,400 | 700 | ..... | ..... | ..... | ..... | 39,900 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

ROCKLAND.—Dredging consisted in making four cuts 500, 410, 160 and 145 feet long, each 25 feet wide, and an average depth of 5 feet. The purposes of the work was the deepening of the approaches to the log slips in front of the saw mill. 12,750 cubic yards of clay were removed.

LOUISVILLE.—One cut 430 feet long, 25 feet wide and 6 feet deep at low water, was made between the wharf and the pier in front of the saw mill. Clay.

GREENVILLE.—Three cuts were made between the wharfs in front of saw mill, leading to the log slip, 700, 645, 270 feet long, each 25 feet wide and 8 feet deep at low water. Sand and clay.

VACUETIT.—Ten cuts were made in front and alongside the wharf for the purpose of deepening the channel and approaches to 10 feet at low water, each 980, 455, 70, 115, 105, 100, 75, 70, 15 and 15 feet long and 25 feet wide. 14,100 cubic yards of clay were removed.

GRAHAM.—Five cuts were made 20, 90, 85, 70 and 60 feet long, each 25 feet wide, in front and alongside of wharf, for the purpose of deepening the approaches to 10 feet at low water. Hard pan, clay and boulders removed.

CAUGHENAWAGA.—The dredging consisted in making one cut alongside the stone wharf, 45 feet long and 25 feet wide. One other cut was also started in front of the ferry wharf, 45 feet long, 25 feet wide, but could not be finished on account of encountering solid rock, which will have to be blasted. 600 cubic yards of stone, mud and clay were removed.

1 GEORGE V., A. 1911

ANNUAL Report from April 1, 1909, to March 31, 1910.

DREDGE 'DESCIENES' OWNER, DEPARTMENT OF PUBLIC WORKS.

| Localities where Dredging was performed. | DATE. | | Depth of Water made below zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. | | | | | |
|--|-----------|----------|---------------------------------|----------------------|--------------|----------------------|----------|-----------|-----------|-------------------------------|----------|
| | From | To | | | | | | | | | |
| Aylmer wharf, Wright Co | Sept. 13. | Nov. 20. | 9 feet. | 4,804 | \$ 6,186 87 | \$ cts. 1 28 78 | | | | | |
| Total expenditure, \$6,186 87. Total cubic yards removed, 4,804. | | | | | | | | | | | |
| DETAILS OF EXPENDITURE. | | | | | | | | | | | |
| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February, and March. | Totals. |
| Wages. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Fuel. | | | | | | 402 67 | 964 67 | 593 67 | 802 75 | 884 42 | 3,648 18 |
| Provisions. | | | | | | 126 12 | 9 95 | 143 12 | | 40 25 | 319 44 |
| Stores and equipment. | | | | | | | | 39 00 | | 82 50 | 121 50 |
| Repairs. | | | | 37 87 | | | 71 08 | | 3 35 | | 74 43 |
| Pilotage and towage. | | | | | | 169 00 | 82 33 | 297 72 | 124 18 | 810 20 | 1,352 39 |
| Contingencies. | | | | | | | 253 67 | 247 26 | | | 160 00 |
| Totals | | | | 37 87 | | 688 79 | 1,391 70 | 1,320 77 | 930 28 | 1,817 46 | 6,186 87 |

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Total. |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Clay and sand..... | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. 1,400 | Cub. yds. 1,750 | Cub. yds. 1,654 | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. 4,804 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

ATLANTA.—The work consisted in dredging a channel, starting from the wharf and leading out to the main channel in the lake. Some dredging was also done alongside the wharf, deepening for the purpose of building a proposed wharf. 4,804 cubic yards of sand and clay were removed.

1 GEORGE V., A. 1911

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'INDUSTRY.' OWNER, DEPARTMENT OF PUBLIC WORKS.

| Localities where Dredging was performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|----------|-------------|---------------------------------|----------------------|--------------|----------------------|
| | From. | To. | | | | |
| Toronto Harbour, York Co. | June 7 | June 26 | 15 feet—19 feet. | 14,750 | | |
| Port Burwell, Elgin Co. | July 26 | October 6 | 20 " | 105,255 | \$ cts. | Cts. |
| Port Stanley, East Essex Co. | Oct. 11 | December 11 | 20 " | 74,437 | 29,190 96 | 14 97 |
| | March 23 | March 31 | | | | |

Total expenditure, \$29,190.96. Total cubic yards removed, 194,942.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|-----------------------|----------|----------|----------|----------|----------|------------|----------|-----------|-----------|------------------------------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages | 551 66 | 686 19 | 782 50 | 1,137 34 | 1,120 32 | 1,191 08 | 1,143 05 | 1,172 40 | 941 90 | 1,533 97 | 10,260 60 |
| Fuel | | | 669 94 | | 503 26 | 163 69 | 629 29 | 827 72 | 170 42 | 436 39 | 3,390 11 |
| Provisions | 203 68 | 242 07 | 351 59 | 383 45 | 379 67 | 424 05 | 380 61 | 165 00 | 303 64 | 101 89 | 2,845 35 |
| Stores and equipment. | 397 47 | 130 15 | 68 73 | 138 73 | 40 40 | 262 70 | 606 70 | 13 08 | 6 23 | 914 21 | 2,538 40 |
| Repairs | 1,193 94 | 1,739 80 | 112 00 | 930 34 | 1,402 94 | 194 45 | 147 64 | 26 03 | 93 16 | 2,541 63 | 8,382 53 |
| Pilotage and towage. | | | | 15 00 | 650 00 | 257 50 | 135 75 | | | | 1,038 25 |
| Contingencies. | 121 45 | 17 43 | | | 224 53 | | 1 40 | 0 67 | 339 62 | 100 62 | 865 72 |
| Totals | 2,468 20 | 2,815 64 | 1,784 76 | 2,624 86 | 4,321 12 | 2,399 13 | 3,087 80 | 2,295 50 | 1,855 06 | 5,628 71 | 29,190 96 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Total. |
|----------------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Clay, tones, sand and mud. | | | 14,750 | 4,355 | 47,725 | 37,367 | 42,620 | 27,531 | 8,580 | | | 12,014 | 194,942 |

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NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

TORONTO HARBOUR.—One cut was made on west side of Canadian Yacht Club Island, 300 feet long, 65 feet wide at bottom, and an average depth of 15 feet at low water. One cut, 225 feet long and 25 feet wide had to be made for the purpose of floating scows. 14,750 cubic yards of sand were removed.

PORT BURWELL.—Three cuts were made through bar outside of piers 375, 1,050 and 955 feet long each, 65 feet wide and 20 feet deep at low water. One cut was made on each side of harbour and north of car ferry slip dock, 350 feet long, 65 feet wide and 20 feet deep at low water. One cut on west side of harbour opposite slip dock, 290 feet long, 63 feet wide and 20 feet deep at low water. Seven cuts were made in turning basin 375, 450, 360, 250, 200 and 40 feet long each, 65 feet wide and 20 feet deep at low water. Part of these seven cuts had to be gone over a second time. One other cut was made through a shoal alongside of each pier, south of the car ferry slip, 200 feet long, 65 feet wide and 20 feet deep at low water. Mud, sand and clay were removed.

PORT STANLEY.—Four cuts were made in turning basin 540, 540, 490 and 190 feet long, each 40 feet wide and 19 feet deep at low water. Two cuts outside of piers, first of these cuts 850 feet long, 60 feet wide and 20 feet deep at low water, starting 200 feet south of end of east pier. Second cut west of this, starting 100 feet in harbour, 100 feet north of end of east pier 750 feet long, 40 feet wide and 20 feet deep at low water. One cut 190 feet long, 30 feet wide and 20 feet deep at low water. One cut 190 feet long, 30 feet wide and 20 feet deep at low water, commencing 100 feet north of end of east pier. One hundred and fifty feet were removed off end of west pier, one cut on each side after removing this pier, 170 feet long, 30 feet wide on east side, cut on west side 40 feet wide and one small cut between these, 40 feet long. The stone removed from this pier being put on west side of breakwater and piled against breakwater with the dredge. One cut in front of east side Fish Co's wharf, 100 feet long, 30 feet wide and 13 feet deep at low water. One other cut at Going Fish wharf, 100 feet long, 30 feet wide and 14 feet deep at low water, was made. On March 23, 1910, this dredge resumed operations at northerly end of inner harbour, dredging to a depth of 16 feet below low water and was still at work at the end of the fiscal year. A small portion of the material excavated was dumped along inner and outer faces of breakwater for protection to same. 74,387 cubic yards of clay, sand and stones were removed.

1 GEORGE V., A. 1911

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued
 DREDGE 'INTERNATIONAL' OWNER, DEPARTMENT OF PUBLIC WORKS.

| Localities where Dredging was performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|----------|----------|---------------------------------|----------------------|--------------|----------------------|
| | From. | To. | | | | |
| Quebec Harbour, Quebec Co. | May 10 | June 19. | 46 feet. | 24,750 | | Cts. |
| St. Charles River, h. water, Quebec Co. | June 21. | Nov. 20. | 46 feet. | 129,500 | 31,412 48 | 21 '68 |

Total expenditure, \$31,412.48. Total cubic yards removed 145,250.

DETAILS OF EXPENDITURE.

| | April. | | May. | | June. | | July. | | August. | | September. | | October. | | November. | | December. | | January, February and March. | | Totals. | |
|-----------------------|--------|------|-------|------|-------|------|-------|------|---------|------|------------|------|----------|------|-----------|------|-----------|------|------------------------------|------|---------|------|
| | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. |
| Wages. | 515 | 00 | 615 | 53 | 598 | 67 | 780 | 45 | 927 | 38 | 970 | 00 | 639 | 35 | 682 | 84 | 472 | 94 | 1,088 | 07 | 7,270 | 23 |
| Fuel. | | | | | | | | | | | | | | | | | | | | | 5,593 | 62 |
| Provisions. | 180 | 28 | 204 | 59 | 204 | 82 | 303 | 03 | 362 | 52 | 400 | 23 | 221 | 62 | 230 | 00 | 115 | 20 | 337 | 75 | 2,580 | 14 |
| Stores and equipment. | 110 | 70 | | | 120 | 65 | 731 | 19 | | | 339 | 88 | 614 | 20 | | | 161 | 85 | 42 | 05 | 2,038 | 68 |
| Repairs. | 47 | 07 | | | 3,620 | 95 | 1,882 | 63 | 632 | 93 | 385 | 06 | 40 | 60 | | | 200 | 00 | 1,414 | 20 | 7,585 | 29 |
| Pilotage and towage. | | | 500 | 00 | | | 750 | 00 | | | | | | | | | 380 | 65 | 4,100 | 00 | 5,640 | 00 |
| Contingencies. | | | | | | | 5 | 27 | 2 | 50 | | | 100 | 00 | | | | | 216 | 10 | 704 | 52 |
| Totals. | 853 | 05 | 1,320 | 22 | 4,695 | 10 | 3,762 | 57 | 1,945 | 33 | 2,095 | 17 | 1,615 | 77 | 3,596 | 61 | 4,240 | 49 | 7,288 | 17 | 31,412 | 48 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | | May. | | June. | | July. | | August. | | September. | | October. | | November. | | December. | | January. | | February. | | March. | | Total. | |
|--------------------|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|------------|--|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|
| | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | |
| Boulders and sand. | 11,250 | | 21,250 | | 24,750 | | 23,750 | | 19,000 | | 28,750 | | 16,500 | | 16,500 | | | | | | | | | | 145,250 | |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

QUEBEC.—The work consisted in dredging in the new basin at St. Charles River, making a depth of 46 feet at low water for new wharf. 145,250 cubic yards of sand and boulders were removed.

SESSIONAL PAPER No. 19

DREDGE 'LAC ST. JEAN,' OWNED, DEPARTMENT OF PUBLIC WORKS.

Localities where Dredging was Performed.

| | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|---|-------------|--------------|---------------------------------|----------------------|--------------|----------------------|
| | From | To | | | | |
| Roberval, Chicoutimi Co., | July 12 | August 31 | 7 feet. | 6,930 | \$ 5,011 45 | \$ cts. 53 37 |
| St. Henri de Taillon (Rivière à la Pipe)..... | September 4 | September 23 | 7 feet. | 2,460 | | |

Total cubic yards removed, 9,390. Cost per cubic yard, \$53.37.

DETAILS OF EXPENDITURE.

| | April. | | May. | | June. | | July. | | August. | | September. | | October. | | November. | | December. | | January February and March. | | Totals. | |
|---------------------------|--------|------|--------|------|--------|------|----------|------|---------|------|------------|------|----------|------|-----------|------|-----------|------|--------------------------------------|------|----------|------|
| | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. |
| Wages..... | 178 84 | | 493 00 | | 455 00 | | 444 75 | | 454 00 | | 446 50 | | 84 00 | | 20 00 | | 20 00 | | 60 00 | | 2,656 09 | |
| Fuel..... | 520 55 | | | | | | 742 95 | | | | | | | | | | | | | | 1,263 50 | |
| Provisions..... | | | 74 80 | | 132 00 | | 132 00 | | 231 00 | | 165 00 | | 22 00 | | | | | | | | 756 80 | |
| Stores and Equipment..... | 6 52 | | | | | | | | | | | | | | | | | | | | 13 25 | |
| Repairs..... | 101 00 | | 88 13 | | 43 19 | | 3 15 | | | | 6 74 | | 1 00 | | | | | | | | 260 62 | |
| Pilotage and Towing..... | | | | | | | | | | | 24 15 | | 25 00 | | | | | | | | 25 00 | |
| Contingencies..... | | | 5 04 | | | | 11 14 | | | | | | | | | | | | | | 36 18 | |
| Totals..... | 806 91 | | 660 97 | | 630 19 | | 1,333 99 | | 685 00 | | 612 39 | | 132 00 | | 20 00 | | 20 00 | | 80 00 | | 5,011 45 | |

QUANTITIES AND DESCRIPTION OF MATERIALS DREDGED.

| | April. | | May. | | June. | | July. | | August. | | September. | | October. | | November. | | December. | | January. | | February. | | March. | | Totals. | |
|------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Boulders, clay and sand..... | | | | | 1,710 | | | | | | 5,220 | | | | | | | | | | | | | | | 9,390 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

The work consisted in dredging in the entrance and in the harbour of Roberval, also at Rivière à la Pipe.

1 GEORGE V., A. 1911

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'MATTAWA'. OWNER, DEPARTMENT OF PUBLIC WORKS.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|-----------------|------------------|---------------------------------|----------------------|--------------|----------------------|
| | From | To | | | | |
| Sturgeon River, Nipissing District (Lake Nipissing)..... | June 17..... | October 10..... | 12-13 feet..... | 53,685 | \$ cts. | 17 52 |
| Restoule Bay, Parry Sound District..... | October 11..... | November 13..... | 10 feet..... | 6,600 | | |

Total expenditures, \$10,568.31. Total cubic yards removed, 60,285. Cost per cubic yard, 17.52.

DETAILS OF EXPENDITURE.

| | April. | | May. | | June. | | July. | | August. | | September. | | October. | | November. | | December. | | January, February and March. | | Totals. | |
|---------------------------|----------|--------|--------|--------|----------|----------|--------|--------|---------|----------|------------|-----------|----------|------|-----------|------|-----------|------|------------------------------|------|---------|------|
| | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. |
| Wages..... | 443 13 | 387 98 | 416 75 | 451 53 | 795 72 | 440 67 | 746 01 | 422 50 | 160 71 | 125 00 | 486 70 | 4,715 99 | | | | | | | | | | |
| Fuel..... | 368 40 | | 290 00 | 186 47 | 360 18 | 680 94 | 161 50 | 147 00 | 15 00 | 15 00 | 1,356 70 | 29 00 | | | | | | | | | | |
| Provisions..... | 116 50 | 128 81 | 151 00 | 167 99 | 165 58 | 161 50 | 147 00 | 15 00 | 15 00 | 1,230 08 | 15 00 | 1,230 08 | | | | | | | | | | |
| Stores and Equipment..... | 253 61 | 92 57 | 78 10 | 4 58 | 32 90 | 8 95 | 5 55 | 25 25 | 6 15 | 119 71 | 575 21 | 607 37 | | | | | | | | | | |
| Repairs..... | 227 13 | 34 53 | 2 40 | 69 14 | 52 04 | 59 98 | 28 73 | 42 80 | | 679 77 | 679 77 | 1,061 96 | | | | | | | | | | |
| Pilotage and Towing..... | | | 4 93 | 18 75 | 18 10 | 11 58 | 24 00 | 81 10 | | | 98 41 | 296 44 | | | | | | | | | | |
| Contingencies..... | 22 57 | 7 00 | | | | | | | | | | | | | | | | | | | | |
| Totals..... | 1,351 34 | 650 89 | 943 18 | 898 46 | 1,424 52 | 1,313 62 | 965 99 | 879 36 | 146 15 | 1,994 80 | 146 15 | 10,568 31 | | | | | | | | | | |

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIALS DREDGED.

| — | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|--------------------------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Boulders, gravel, clay and sand..... | | | 5,100 | 14,900 | 15,280 | 14,730 | 6,375 | 3,900 | 60 | ..... | ..... | ..... | 60,285 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

LAKE NIPISSING (mouth of Sturgeon River).—Dredging consisted in making two cuts, 2,775 and 2,037 feet long each, 25 feet wide and from 12 to 13 feet deep at low water in the main channel at the entrance to this river, removing sand and clay.

RESERVOIR BAY.—One cut was made starting in front of Smith's second storehouse, 389 feet long. One other cut was made removing a shoal in channel opposite Smith's first storehouse 229 feet long. Both these cuts were made 25 feet wide and to a depth of 10 feet 6 inches at low water. Rock, boulders and gravel were removed.

1 GEORGE V., A. 1911

ANNUAL REPORT from April 1, 1909 to March 31, 1910—Continued.
 DREDGE 'NIPissing'. OWNER, DEPARTMENT OF PUBLIC WORKS.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. | | | | | |
|--|--------------|--------------|---------------------------------|----------------------|--------------|----------------------|----------|-----------|-----------|------------------------------|-----------|
| | From. | To. | | | | | | | | | |
| Black Rapids | June 1..... | July 2..... | 10 feet. | 6,525 | | cts. | | | | | |
| Hogs Back, Carleton Co. | July 8..... | July 24..... | 10 " | 10,790 | | | | | | | |
| Sterling Dock, Ottawa, Carleton Co. | July 30..... | July 31..... | 10 " | 375 | | | | | | | |
| New Edinburgh, Carleton Co. | Aug. 3..... | Aug. 9..... | 10 " | | 16,745.24 | 26.68 | | | | | |
| " | Oct. 22..... | Nov. 16..... | 10 " | 18,745 | | | | | | | |
| Hawkesbury, Prescott Co. | Aug. 12..... | Oct. 16..... | 10 " | 24,865 | | | | | | | |
| Hull, Ottawa Co. | Nov. 17..... | Nov. 25..... | 10 " | 1,350 | | | | | | | |
| Total expenditure \$16,745.24. Total cubic yards removed 62,750. | | | | | | | | | | | |
| DETAILS OF EXPENDITURE. | | | | | | | | | | | |
| — | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages..... | 969 44 | 411 29 | 541 15 | 508 71 | 1,215 48 | 490 00 | 1,782 43 | 787 90 | 1,899 71 | 3,511 12 | 11,617 23 |
| Fuel..... | 6 60 | | | | 430 63 | 538 84 | 162 91 | | 29 00 | | 1,158 98 |
| Provisions..... | | 148 65 | 148 74 | 152 85 | 249 16 | 190 69 | 199 62 | 175 31 | 29 54 | | 1,285 56 |
| Stores and equipment..... | 139 76 | 7 50 | 10 32 | 8 64 | | | 10 80 | | | 132 60 | 312 79 |
| Repairs..... | 449 17 | 11 05 | 11 40 | 49 46 | 3 17 | 109 84 | 101 21 | 456 17 | | 924 05 | 2,107 53 |
| Boatage and towage..... | | | 25 00 | | 55 18 | 30 00 | 75 00 | | | | 160 00 |
| Antagonies..... | 12 85 | | | | 30 00 | 30 00 | | | 13 00 | 12 30 | 43 15 |
| Totals..... | 1,577 82 | 578 49 | 736 61 | 719 66 | 1,988 62 | 1,350 37 | 2,331 97 | 1,419 38 | 1,453 25 | 4,580 07 | 16,745 24 |

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Boulders, gravel, clay and sand, | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
|  | ..... | ..... | 6,150 | 11,540 | 10,890 | 11,555 | 11,985 | 10,650 | ..... | ..... | ..... | ..... | 62,750 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

BLACK RAPIDS. One cut was made below the locks in the main channel 372 feet long, 30 feet wide and 10 feet deep at low water. This material was dumped behind the dam above the locks, 6,525 cubic yards of clay were removed.

HOO'S BACK, RIVER CANAL. One cut was made in the main channel, 417 feet long, 30 feet wide and 10 feet deep at low water. Material dredged was used to fill in behind stop logs of the dam. 10,790 cubic yards of clay were removed.

STERLING DOCK, OTTAWA RIVER. The dredging consisted in making one cut in front of the wharf 150 feet long, 30 feet wide and an average of 9 feet at low water. Removing 375 cubic yards of clay.

NEW BRUNSWICK. Six cuts were made in front of the ferry slips, 343, 326, 417, 497 and 529 feet long each, 27 feet wide and 10 feet deep at low water. Kind of material gravel, sawdust, clay and slabs.

HAWKESBURY. Dredging consisted in making one cut from outside end of main channel into pier No. 5, 3,405 feet long, 27 feet wide and 10 feet deep at low water. One cut from pier No. 2 to outside end of channel 782 feet long, 27 feet wide and 10 feet at low water, also short cut 261 feet long, 27 feet wide and 10 feet deep at low water. This cut was made to straighten the channel, also one cut 131 feet long, 27 feet wide and 9 feet deep at low water in front of Hawkesbury Landing Co's wharf.

One cut 155 feet long, 27 feet wide and 10 feet deep at low water was made between islands on proposed new channel into Town of Hawkesbury. Clay, gravel and boulders were removed.

HULL. One cut was made 318 feet long, 27 feet wide and 8 feet deep at low water for the purpose of laying new sewer pipes. One other cut 46 feet long, 27 feet wide was made to deepen the channel to 19 feet at low water at foot of jack ladder into mill. 1,350 cubic yards of slabs and sawdust were removed.

1 GEORGE V., A. 1911

ANNUAL REPORT from April 1, 1909 to March 31, 1910—Continued.
DREDGE 'NO. 2'. OWNER, DEPARTMENT OF PUBLIC WORKS.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|---------------|---------------|---------------------------------|----------------------|--------------|----------------------|
| | From. | To. | | | | |
| Lièvre River, Labelle Co | June 30 | Nov. 13 | 9—10 feet. | 14,007 | \$ 8,058 59 | cts. 57 53 |

Total expenditure \$8,058 59. Total cubic yards removed 14,007.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January February and March. | Totals. |
|-------------------------|----------|---------|---------|---------|---------|------------|----------|-----------|-----------|-----------------------------|----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages .. | 424 00 | 445 00 | 527 49 | 405 00 | 437 00 | 435 00 | 710 00 | 418 00 | 125 00 | 273 99 | 4,240 48 |
| Fuel .. | 516 25 | | | | | | | 160 74 | | | 676 99 |
| Provisions .. | 147 50 | 157 50 | 178 35 | 153 00 | 163 00 | 168 00 | 168 00 | 139 50 | | 54 00 | 1,348 85 |
| Stores and equipment .. | 247 56 | | 46 30 | | | | | | 23 65 | 192 95 | 510 46 |
| Repairs .. | | | 30 50 | | | | | | 35 13 | 600 86 | 1,224 71 |
| Contingencies .. | 1 46 | 11 02 | 37 64 | | | | | 508 22 | | 46 98 | 97 10 |
| Totals | 1,336 77 | 613 52 | 820 28 | 558 00 | 600 00 | 603 00 | 878 00 | 1,296 46 | 183 78 | 1,168 78 | 8,058 59 |

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Total. |
|-----------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| G r a v e l, clay and stones..... | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
|  | ..... | ..... | 265 | 2,985 | 3,338 | 3,364 | 3,221 | 834 | ..... | ..... | ..... | ..... | 14,007 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

LAVERIE RIVER.—One cut was made 85 feet long, 25 feet wide and 10 feet deep at low water, on an approach to the wharf above the locks at Poupore. Seven other cuts were made above the locks, 313, 50, 135, 135, 150 and 100 feet long, 25 feet wide and 10 feet deep at low water. All these cuts were made for the purpose of deepening the channel, removing shoals and materials which had fallen in channel. One cut was made at the wharf west at Notre Dame de La Salette, 60 feet long, 25 feet wide and 6 feet deep at low water. One other cut was made below this wharf in the main channel 700 feet long, 25 feet wide and 10 feet deep. Clay, gravel, stone and stumps were removed.

1 GEORGE V., A. 1911

ANNUAL REPORT from April 1, 1909 to March 31, 1910—Continued.
 DREDGE 'NO. 3.' OWNER, DEPARTMENT OF PUBLIC WORKS.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|----------------------|-----------------------|---------------------------------|----------------------|--------------|----------------------|
| | From | To | | | | |
| Papineauville, Labelle Co. | September 8. | September 18. | 7 feet. | 600 | \$ cts. | Cts. |
| Pierreville, Yamaska Co. | October 4. | November 20. | 9½ " | 13,270 |  |  | 4,370 20 | 31 50 |

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|----------------------------|---------|---------|---------|---------|---------|------------|----------|-----------|-----------|------------------------------|----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages | | | | | 109 64 | 425 48 | 596 94 | 430 40 | 71 01 | 617 02 | 2,140 45 |
| Fuel | | | | | | 127 82 | 149 00 | 3 50 | 7 00 | 306 13 | 2,703 09 |
| Provisions | | | | | | 157 07 | 186 70 | 137 24 | 20 56 | | 481 57 |
| Stores and equipment | | | | | | | | 1 45 | | 118 48 | 119 93 |
| Repairs | | | | | | | | 38 52 | 10 57 | 469 27 | 518 36 |
| Contingencies | | | | | | 15 00 | | 328 75 | 34 60 | 30 45 | 406 80 |
| Totals | | | | | 109 64 | 705 37 | 932 64 | 987 46 | 143 74 | 1,541 35 | 4,370 20 |

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|
| Clay and sand. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. 600 | Cub. yds. 5,188 | Cub. yds. 8,082 | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. 13,870 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

PAPINEAUVILLE.—Two cuts were made in front of the log slip, 210 feet long each, 30 feet wide and an average of 9½ feet deep at low water. Six hundred cubic yards of clay were removed.

PIGNEVILLE.—Dredging consisted in making two cuts in the main channel near Landry island, 750 and 900 feet long each, 25 feet wide and 7 feet deep at low water. Kind of material, sand and clay.

1 GEORGE V., A. 1911

ANNUAL REPORT from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'ONTARIO.' OWNER, DEPARTMENT OF PUBLIC WORKS.

| Localities where Dredging was Performed. | DATE | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|--------------------|--------------------|---------------------------------|----------------------|--------------|----------------------|
| | From | To | | | | |
| Pelae Island, Essex Co. | April 19. | May 8. | 9 feet. | 9,700 | 10,647 40 | .24 93 |
| Kingsville, Essex Co. | May 10. | September 25. | 14 " | 19,800 | | |
| Port Stanley, East Elgin Co. | September 27. | October 30. | 21 " | 4,300 | | |
| Wallaceburg, Kent Co. | November 1. | November 30. | 19 " | 8,900 | | |

Total expenditure, \$10,647.40. Total cubic yards removed, 42,700.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|----------------------------|---------|---------|----------|---------|---------|------------|----------|-----------|-----------|------------------------------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages. | 314 00 | 338 39 | 430 00 | 430 90 | 409 06 | 738 00 | 430 00 | 485 49 | 251 68 | 955 75 | 4,873 27 |
| Fuel. | | | 293 54 | 172 96 | | 62 56 | 240 54 | | 203 43 | | 973 03 |
| Provisions. | 86 00 | 112 84 | 153 60 | 153 00 | 153 00 | 134 70 | 153 00 | 175 75 | 2 00 | 10 28 | 1,133 57 |
| Stores and equipment. | 79 90 | 98 10 | 20 45 | | 5 00 | 8 30 | 8 57 | 13 04 | | 184 61 | 413 00 |
| Repairs. | | | 146 95 | 120 74 | 31 16 | 304 73 | 93 31 | 68 00 | 33 65 | 1,202 13 | 2,060 67 |
| Pilotage and towage. | 47 73 | 51 40 | 41 70 | 49 55 | 4 73 | 303 75 | 468 75 | | 64 65 | 71 60 | 393 75 |
| Contingencies. | | | | | | | | | | | 800 11 |
| Totals. | 527 63 | 600 73 | 1,085 64 | 927 15 | 622 95 | 1,607 04 | 1,394 17 | 742 28 | 555 41 | 2,424 40 | 10,647 40 |

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|-------------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Clay and sand | 7,000 | 2,700 | 5,800 | 700 | 8,100 | 5,400 | 4,100 | 8,900 | | | | | 42,700 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

PELLE ISLAND.—Dredging consisted in making a cut for the purpose of allowing the dredge to move to deep water, removing 9,700 cubic yards of clay.

KINGSVILLE.—Seven cuts, 600 feet long each, 25 feet wide and 14 feet deep at low water were made, between the east and west pier, alongside the east pier. Two cuts were made, starting from the end of east pier leading out to deep water, 130 and 50 feet long each, 25 feet wide and 14 feet deep at low water. Sand.

PORT STANLEY.—Two cuts were made, one 130 feet long and one 270 feet long, 25 feet deep at low water, starting from end of west dock leading to main channel in the lake. Another cut was made inside the harbour alongside west dock when weather was too rough to work outside, 130 feet long, 25 feet wide and 21 feet deep at low water. Kind of material, sand and clay.

WALLACEBURG.—The end of Johnston's head was removed for the purpose of straightening channel. One cut 230 feet long, 25 feet wide and 19 feet deep at low water. Clay.

1 GEORGE V., A. 1911

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'OTTAWA' OWNER, DEPARTMENT OF PUBLIC WORKS.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|---------------|----------------|---------------------------------|----------------------|--------------|----------------------|
| | From | To | | | | |
| Sorel, Richelieu Co. | May 17 | June 30 | } 20-34 feet. | 23,950 | } 19,646 53 | 34.37 |
| Rimouski, Rimouski Co. | Oct. 11 | Nov. 6 | | | | |
| | July 26 | Sept. 25 | 15-16 " | 33,200 | | |

Total expenditure, \$19,646.53. Total cubic yards removed, 57,150.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|----------------------------|---------|----------|----------|----------|----------|------------|----------|-----------|-----------|------------------------------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages. | 531 49 | 835 65 | 882 17 | 872 28 | 918 06 | 915 00 | 874 06 | 886 50 | 360 08 | 685 55 | 7,710 84 |
| Fuel. | 187 50 | 22 68 | 384 85 | 277 83 | 349 88 | 218 45 | 356 84 | 2,661 10 | 2,969 84 | 112 36 | 5,593 62 |
| Provisions. | 18 81 | 17 00 | | 2 45 | | | | | | | 2,638 79 |
| Stores and equipment. | 77 63 | 185 00 | | 100 60 | 304 75 | 293 34 | 898 52 | | 131 35 | 651 12 | 38 26 |
| Repairs. | | | | | | | | | 10 00 | | 2,702 31 |
| Pilotage and towage. | | | | | | | 775 00 | | | | 785 00 |
| Contingencies. | 6 95 | | | | | | | | 163 91 | 6 85 | 177 71 |
| Totals. | 822 38 | 1,392 26 | 1,167 02 | 1,313 16 | 1,572 69 | 1,426 79 | 2,884 42 | 3,885 44 | 3,696 49 | 1,485 88 | 19,646 53 |

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIALS DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|-----------------------|----------------|-----------------|-----------------|-----------------|------------------|------------------|------------------|-----------------|----------------|----------------|----------------|----------------|------------------|
| Clay, stones and sand | Cub. Yds. | Cub. Yds. 1,350 | Cub. Yds. 6,450 | Cub. Yds. 1,600 | Cub. Yds. 22,300 | Cub. Yds. 10,200 | Cub. Yds. 11,000 | Cub. Yds. 5,150 | Cub. Yds. | Cub. Yds. | Cub. Yds. | Cub. Yds. | Cub. Yds. 57,150 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

SOMER.—The work consisted in deepening the approach from the main wharf, making an average depth of 30 feet at low water, moving sand, stone and mud.

RIPOUTSKI.—The main channel was deepened to a depth of 16 feet at low water, starting near the wharf and continuing out to deep water. 33,200 cubic yards of mud and clay were removed.

1 GEORGE V., A. 1911

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.

DREDGE 'PROGRESS,' OWNER, DEPARTMENT OF PUBLIC WORKS.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below zero. | Cubic Yards Removed. | Expenditure. \$ cts. | Cost per Cubic Yard. |
|---|--------------|----------------|---------------------------------|----------------------|-------------------------|----------------------|
| | From | To | | | | |
| Levis, Levis Co. | May 10 | May 15 | } 15 feet. | 2,400 | } 22,999 95 | 20 67 |
| Quebec (L'Anse-au-Loup), Quebec Co. | " 17 | June 5 | | 16,650 | | |
| St. Michel de Bellechasse, Bellechasse Co. | June 7 | Sept. 25 | | 51,700 | | |
| St. Jean des Chaudières, Lotbinière Co. | Oct. 4 | Nov. 6 | | 28,900 | | |
| Quebec, Quebec Co. | Nov. 8 | " 20 | | 11,600 | | |

Total expenditure, \$22,999.95. Total cubic yards removed, 111,250.

DETAILS OF EXPENDITURE.

| | April. | | May. | | June. | | July. | | August. | | September. | | October. | | November. | | December. | | January, February and March. | | Totals. | |
|----------------------------|--------|------|-------|------|-------|------|-------|------|---------|------|------------|------|----------|------|-----------|------|-----------|------|------------------------------|------|---------|------|
| | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. |
| Wages | 577 | 33 | 601 | 40 | 585 | 00 | 595 | 00 | 584 | 62 | 625 | 00 | 618 | 22 | 853 | 60 | 392 | 76 | 915 | 91 | 6,358 | 84 |
| Fuel | 177 | 50 | 251 | 41 | 230 | 10 | 277 | 16 | 277 | 16 | 277 | 16 | 277 | 16 | 1,878 | 01 | 2,909 | 85 | 8 | 00 | 5,601 | 62 |
| Provisions | 3 | 40 | 213 | 60 | 230 | 10 | 230 | 27 | 263 | 77 | 252 | 60 | 248 | 04 | 103 | 60 | 103 | 60 | 196 | 47 | 1,915 | 53 |
| Stores and equipment | 2,663 | 00 | 74 | 81 | 30 | 00 | 775 | 00 | 825 | 00 | 59 | 46 | 18 | 00 | 3 | 55 | 1,022 | 58 | 297 | 45 | 456 | 67 |
| Repairs | 23 | 50 | 400 | 00 | 697 | 50 | 775 | 00 | 825 | 00 | 800 | 00 | 78 | 20 | 50 | 00 | 50 | 00 | 15 | 57 | 3,811 | 07 |
| Pilotage and towage | | | | | | | | | | | | | | | | | 1,335 | 00 | 40 | 22 | 2,450 | 00 |
| Contingencies | | | | | | | | | | | | | | | | | | | | | 2,496 | 22 |
| Totals | 3,444 | 73 | 1,542 | 97 | 1,462 | 60 | 1,600 | 27 | 1,950 | 55 | 2,013 | 71 | 962 | 46 | 2,731 | 61 | 5,847 | 43 | 1,473 | 62 | 22,999 | 95 |

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|-------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Boulders, clay and sand | Cub. Yds. | Cub. Yds. | Cub. Yds. | Cub. Yds. | Cub. Yds. | Cub. Yds. | Cub. Yds. | Cub. Yds. | Cub. Yds. | Cub. Yds. | Cub. Yds. | Cub. Yds. | Cub. Yds. |
| | 14,250 | 11,700 | 15,400 | 16,100 | 13,300 | 22,800 | 17,700 | | | | | | 111,250 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

LAVERIE. — Moving of obstructions in front of wharf. 2,400 cubic yards of sand were removed.

QUEBEC. — Removing obstructions in front and alongside different wharfs. Kind of material removed, sand and boulders.

St. Michel de Bellefleur. — The main channel was deepened leading to and from wharf, removing 51,700 cubic yards of clay, sand and boulders.

St. JEAN DES CHAILLONS. — Dredging consisted in removing a shoal and deepening channel in front of Government wharf, 28,900 cubic yards of sand and rock were removed.

1 GEORGE V., A. 1911

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.

DREDGE, 'QUEEN,' OWNER, DEPARTMENT OF PUBLIC WORKS.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. \$ cts. | Cost per Cubic Yard. |
|--|--------------|--------------|---------------------------------|----------------------|-------------------------|----------------------|
| | From | To | | | | |
| New Laskard, Nipissing District. | July 1. | August 28 | 11 feet. | 12,245 | | |
| Hadleybury " | August 30. | September 4 | 10 feet. | 724 | | |
| Ville Marie, Pontiac Co., " | September 6 | September 25 | 10 feet. | 2,636 | 11,808 78 | 71 64 |
| Tuniskaming " | September 27 | November 20 | 7-10 feet. | 878 | | |

Total expenditure \$11,808 78. Total cubic yards removed 16,483.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|-----------------------|----------|---------|---------|---------|---------|------------|----------|-----------|-----------|------------------------------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages. | 418 75 | 454 75 | 460 00 | 480 00 | 480 00 | 519 79 | 751 50 | 554 44 | 521 35 | 1,002 93 | 5,723 42 |
| Fuel. | 400 00 | | | | | 170 93 | 18 00 | | 253 20 | 158 75 | 860 88 |
| Provisions. | 155 00 | 174 29 | 177 00 | 183 00 | 183 00 | 183 00 | 183 00 | 191 00 | 196 37 | 331 25 | 1,926 91 |
| Stores and equipment. | 60 20 | 89 06 | 44 96 | | 91 73 | 40 83 | 40 44 | 54 15 | 80 95 | 452 23 | 964 57 |
| Repairs. | | 33 75 | 69 69 | 151 65 | 53 67 | 192 78 | 74 41 | 317 08 | 44 69 | 922 32 | 1,897 64 |
| Prochage and towage. | | | | | | | 47 50 | | 119 00 | | 166 50 |
| Contingencies. | 11 61 | 30 00 | 1 85 | 16 17 | | | 62 96 | 5 69 | 10 00 | 101 78 | 238 86 |
| Totals. | 1,144 65 | 782 75 | 752 93 | 840 22 | 857 80 | 1,107 24 | 1,177 81 | 1,121 76 | 994 96 | 3,623 26 | 11,808 78 |

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|---------------------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Boulders, gravel, clay and sand | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Rock | | | | 6,660 | 6,057 | 2,888 | 438 | 420 | | | | | 16,023 |
| | | | | | 20 | | | | | | | | 20 |
| Totals | | | | 6,660 | 6,057 | 2,888 | 438 | 420 | | | | | 16,483 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

NEW LORKARD. Work consisted in making two cuts in main channel, 650 and 994 feet long, 25 feet wide and 11 feet deep at low water. 12,245 cubic yards of clay were removed.

HATLEYBURY. One cut was made alongside of wharf so as to allow steamers to land at back of wharf, 175 feet long, 25 feet wide and 11 feet deep at low water, removing sand and clay.

VILLE MAIRIE. Two cuts were made in front of wharf 280 feet and 171 feet long, 26 feet wide and 94 feet deep at low water. Kind of material, clay.

THURKAMING. A cut 266 feet long, 25 feet wide and 7-10 feet deep at low water. 878 cubic yards of rock, boulders and gravel were removed. This cut was made in front of the dam.

1 GEORGE V., A. 1911

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.
DREDGE, 'QUEBEC,' OWNER, DEPARTMENT OF PUBLIC WORKS.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|--------------|--------------|---------------------------------|-------------------------------------|--------------|----------------------|
| | From | To | | | | |
| Port Burwell, Elgin Co. | April 28. | July 17. | 22 feet. | 103,020 | | |
| Niagara-on-the-Lake, Lincoln Co. | July 26. | September 4. | 26 feet. | 30,400 | | |
| Hamilton, Wentworth Co. | September 7. | October 23. | 18 feet. | 94,600 | 26,049 29 | 10-19 |
| Brockville, Leeds Co. | November 3. | December 4. | 18-29 feet. | 29,200 | | |
| Total expenditure, \$26,049.29. | | | | Total cubic yards removed, 257,220. | | |

| DETAILS OF EXPENDITURE. | | | | | | | | | | |
|-------------------------|----------|----------|----------|----------|----------|------------|----------|-----------|-----------|-----------|
| | April. | May. | June. | July. | August. | September. | October. | November. | December. | Totals. |
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages | 503 17 | 1,413 29 | 1,100 00 | 1,288 47 | 1,200 49 | 1,113 31 | 1,212 62 | 1,125 00 | 843 50 | 11,122 85 |
| Fuel | 310 75 | 246 68 | 207 62 | 963 75 | 930 41 | 265 60 | 10 50 | 1,110 40 | 182 58 | 4,622 84 |
| Provisions | 168 95 | 411 24 | 388 00 | 400 53 | 418 29 | 469 51 | 421 80 | 401 72 | 222 83 | 3,461 69 |
| Stores and equipment | 437 80 | 166 11 | 220 84 | 333 92 | 264 42 | 325 31 | | 53 44 | 294 13 | 988 23 |
| Repairs | 49 72 | 17 20 | 62 09 | 63 44 | 307 97 | 363 30 | 6 00 | 379 64 | 248 81 | 3,254 20 |
| Pilotage and towage | 340 00 | | | 15 00 | | 35 00 | | 10 00 | | 400 00 |
| Contingencies | 2 57 | 17 01 | 64 94 | 78 22 | 287 27 | | 23 13 | | 190 64 | 757 29 |
| Totals | 1,812 96 | 2,230 93 | 2,043 49 | 3,183 33 | 3,408 85 | 2,712 63 | 1,674 05 | 3,080 29 | 1,986 49 | 26,049 29 |

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| — | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|-----------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|-----------|-----------|-----------|----------------------|
| Clay, stones and sand | Cub. yds. 4,242 | Cub. yds. 43,026 | Cub. yds. 38,178 | Cub. yds. 21,774 | Cub. yds. 24,600 | Cub. yds. 50,600 | Cub. yds. 45,600 | Cub. yds. 27,400 | Cub. yds. 1,800 | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. 257,220 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

PORT BURWELL.—Eight cuts were made inside of piers, 550 feet long each and 35 feet wide, one cut made 1,000 feet long by 35 feet wide, inside of piers, starting from end of above eight cuts and leading to end of piers. Two other cuts were made, outside of piers starting from end of piers and leading to deep water in the lake, one 700 feet and one 1,075 feet long, 40 feet wide. All the above cuts were made to a depth of 22 feet at low water. Kind of material, silt and clay.

NIAGARA-ON-THE-LAKE.—Work consisted in removing three shoals which interfered with navigation. Shoal No. 1, 500 feet long, 114 feet wide; shoal No. 2, 300 feet long, 76 feet wide; shoal No. 3, 40 feet long, 38 feet wide. A depth of 26 feet at low water was made at these shoals. Shoal No. 1 was completely removed, while shoals Nos. 2 and 3 were only partly removed. 30,400 cubic yards of silt were removed.

HAMILTON.—A channel was dredged about 2,000 feet long by 75 feet wide, starting from end of Harvester Co.'s wharf, and leading to deep water in the lake. One other cut was made in front of wharf 300 by 100 feet wide. Alongside of wharf one cut 500 feet long and 50 feet wide was made to a depth of 18 feet at low water. Clay and sand were removed.

BROCKVILLE.—One cut 850 feet long, 38 feet wide and 30 feet deep at low water, was made in front of water works dock, coal dock, Bowie's wharf and Reynolds' coal dock. The following cuts were made in front and alongside Canadian Pacific Railway yard dock, 325 feet long, 30 feet wide and 18 feet at low water; 125 feet long, 30 feet wide, 20 feet deep at low water; 495 feet long, 30 feet wide and 20 feet deep at low water; 120 feet long, 30 feet wide and 18 feet deep at low water; 175 feet long, 36 feet wide and 18 feet deep at low water. Some cribs were also removed and a depth of 18 feet at low water was made. An old crib was also removed in front of the C.P.R. ferry dock and the channel dredged to 18 feet deep at low water. Size of crib 125 feet long, 30 feet wide. Size of channel 125 feet long, 30 feet wide. Clay and stones were removed.

1 GEORGE V., A. 1911

ANNUAL REPORT from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'ST. LOUIS,' OWNER, DEPARTMENT OF PUBLIC WORKS.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. \$ cts. | Cost per Cubic Yard. |
|--|-------------|-------------|---------------------------------|----------------------|-------------------------|----------------------|
| | From. | To. | | | | |
| Bate la Vallière Yamaska, Yamaska Co. | May 24 | July 17 | 3½ feet. | 12,744 | | |
| Sto. Anne de Sorel, Richelieu Co. | July 19 | July 24 | 3 feet. | 1,165 | | |
| Ile de Gracy, Berthier Co. | July 26 | July 31 | 3 feet. | 883 | | |
| Berthierville, " | August 2 | October 2 | 2½ and 9½ feet. | 13,404 | 7,580 03 | 0 20 58 |
| Isle Madame, " | October 5 | October 16 | 3½ feet. | 2,971 | | |
| Isle Dupas, " | October 18 | November 13 | 6 feet. | 5,235 | | |
| Sorel, Richelieu Co. | November 15 | November 17 | 10 feet. | 1,120 | | |

Total expenditure, \$7,580.03. Total cubic yards removed 36,822.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|---------------------------|---------|----------|---------|---------|---------|------------|----------|-----------|-----------|------------------------------|----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages..... | 330 40 | 352 33 | 405 00 | 405 00 | 405 00 | 435 00 | 280 00 | 405 00 | 90 00 | 92 42 | 3,290 15 |
| Fuel..... | | 285 86 | 175 75 | 339 85 | 254 19 | 87 31 | | | | | 1,142 96 |
| Provisions..... | 110 14 | 136 10 | 170 76 | 168 00 | 154 80 | 161 27 | 127 89 | 142 87 | | 17 00 | 1,188 83 |
| Stores and equipment..... | 144 94 | 64 98 | 39 74 | | | | | 9 00 | 11 55 | 43 44 | 313 65 |
| Repairs..... | 2 96 | 355 62 | 3 00 | | | 110 98 | 10 08 | 7 09 | 156 75 | 801 55 | 1,418 03 |
| Contingencies..... | 25 27 | 1 63 | | | | 10 00 | 11 95 | 20 50 | 200 00 | 14 04 | 286 41 |
| Totals..... | 616 71 | 1,156 54 | 794 25 | 573 00 | 899 65 | 971 44 | 517 23 | 584 46 | 458 30 | 968 45 | 7,580 03 |

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| — | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|
| Clay and sand..... | Cub. yds. | Cub. yds. 1,489 | Cub. yds. 7,589 | Cub. yds. 5,723 | Cub. yds. 6,281 | Cub. yds. 6,800 | Cub. yds. 5,701 | Cub. yds. 3,245 | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. 36,822 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

YAMASKA, (Baie de la Vallière).—One cut 3,300 feet long 33 feet wide and $3\frac{1}{2}$ feet deep at low water, starting from opposite Ile St. Jean and going through a swamp, was made for the purpose of drying up surrounding lands. 12,744 cubic yards of clay were removed.

STE. ANNE DE SOREL.—One cut 414 feet long, 28 feet wide and 3 feet deep at low water was made from the main channel to the beach in front of Broullard's property. Clay.

ILE DE GRACE.—An approach was made opposite the priest's property. One cut 103 feet long, 28 feet wide and 3 feet deep at low water was made. 883 cubic yards of clay were removed.

BEUTHIAVILLE.—One cut was made 50 feet long, 30 feet wide and $3\frac{1}{2}$ feet deep at low water at the entrance of Bayoune river. One cut was made on the opposite shore, 453 feet long, 30 feet wide and $3\frac{1}{2}$ feet deep at low water. One cut 5,403 feet long, 33 feet wide and $9\frac{1}{2}$ feet deep at low water was made in the main channel leading to the wharf. 13,401 cubic yards of clay were removed.

ILE MAIRAGE.—One cut 340 feet long 25 feet wide was made. Material removed was dumped on bank for the purpose of elevating the main road. 2,271 cubic yards of clay were removed.

ILE DUTAS.—One cut 975 feet long, 31 feet wide and 6 feet deep at low water was made, starting from main channel leading to the bridge. 5,235 cubic yards of sand were removed.

SOREL.—Dredging consisted in making one cut 251 feet long, 33 feet wide and 10 feet deep at low water, in front of the Government wharf leading to the Lancelot basin. 1,120 cubic yards of sand were removed.

1 GEORGE V., A. 1911

ANNUAL REPORT, from April 1, 1909, to March 31, 1910.—*Continued.*
DREDGE 'SIR RICHARD,' OWNER, DEPARTMENT OF PUBLIC WORKS.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure \$ cts. | Cost per Cubic Yard. |
|--|-------------------|------------------|---------------------------------|----------------------|------------------------|----------------------|
| | From. | To | | | | |
| Kingston, Frontenac Co..... | June 21..... | June 24..... | 14-15 feet..... | 1,800 | 15,160 99 | 0 23 68 |
| Garden Island, Frontenac Co..... | May 24..... | June 20..... | 14 feet..... | 12,380 | | |
| Frenchman's Bay, Ontario Co..... | June 25..... | June 29..... | 14 feet..... | 23,800 | | |
| Bowmanville, Durham Co..... | July 12..... | September 8..... | 12 feet..... | 23,700 | | |
| Newcastle, "..... | September 10..... | November 10..... | 15 feet..... | 2,400 | | |
| | November 11..... | November 18..... | 14 feet..... | | | |

Total expenditure, \$15,160.99. Total cubic yards removed, 64,000.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Total. |
|---------------------------|---------|----------|----------|---------|---------|------------|----------|-----------|-----------|------------------------------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages..... | 461 33 | 456 75 | 370 66 | 425 00 | 425 00 | 425 00 | 425 00 | 481 84 | 308 60 | 2,772 98 | 6,555 16 |
| Fuel..... | | 279 51 | 574 25 | | 273 26 | 293 86 | 234 03 | 217 38 | 43 95 | 95 33 | 1,987 50 |
| Provisions..... | 87 65 | 153 00 | 139 50 | 158 10 | 162 50 | 153 00 | 153 00 | 182 45 | 35 55 | | 1,224 75 |
| Stores and equipment..... | 136 96 | 217 87 | 62 03 | | 27 71 | 4 06 | 7 80 | 5 57 | 150 34 | 465 85 | 1,078 19 |
| Repairs..... | 110 41 | 9 71 | 79 76 | 11 03 | 15 35 | 316 01 | 8 45 | 5 13 | 15 06 | 2,171 59 | 2,742 50 |
| Photage and towage..... | 14 05 | 6 39 | 500 00 | | | | | | | | 500 00 |
| Contingencies..... | | | 1 10 | | | 10 75 | 3 30 | 1 23 | | 1,035 98 | 1,072 80 |
| Totals..... | 810 40 | 1,123 23 | 1,727 30 | 594 13 | 903 82 | 1,178 68 | 831 50 | 896 60 | 553 50 | 6,541 73 | 15,160 99 |

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|---|--------------------|------------------|---------------------|--------------------|---------------------|--------------------|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------|
| Hard pan, boulders, gravel, clay and sand. | Cub. yds. | Cub. yds. 500 | Cub. yds. 13,600 | Cub. yds. 9,100 | Cub. yds. 12,200 | Cub. yds. 9,800 | Cub. yds. 11,500 | Cub. yds. 7,300 | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | 64,000 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

GARDEN ISLAND.—One cut 2,470 feet long, 30 feet wide and 14 feet deep at low water, making a channel from the main channel to the wharf, removing sand, clay and hardpan.

KINGSTON.—One cut was made alongside the Locomotive works dock 110 feet long, 25 feet wide and 10 feet deep at low water. Sand and boulders were removed.

FRESCUMAN'S BAY.—Three cuts were made 865 feet long each, one next to the other, giving a channel 90 feet wide and a depth of 14 feet at low water, next to the breakwater and leading from the lake to the wharf and elevator inside the luy. Sand and stones were removed.

BOWMANVILLE.—A channel was made at the entrance and between the piers 750 feet long, 100 feet wide with a bell shaped entrance, giving a width at the outer end of 300 feet. A depth of 14 feet at low water was made, removing sand and gravel.

NEWCASTLE.—One cut was made in the channel between the breakwater and the lighthouse, 325 feet long, 30 feet wide, and 14 feet deep at low water. 2,400 cubic yards of sand were removed.

1 GEORGE V., A. 1911

ANNUAL REPORT, from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'No. 1,' OWNER, DEPARTMENT OF PUBLIC WORKS.

| Locality where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. \$ cts. | Cost per Cubic Yard. \$ cts. |
|--|---------------|--------------|---------------------------------|----------------------|-------------------------|---------------------------------|
| | From | To | | | | |
| River St. Louis..... | April 12..... | Nov. 20..... | 5-9 feet..... | 18,562 | \$ 6,336 13 | \$ 0 34 13 |

Total expenditure, \$6,633. 13. Total cubic yards removed, 18,562.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|--------------------|---------|---------|---------|----------|----------|------------|----------|-----------|-----------|------------------------------|----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages..... | 491 56 | | 647 34 | 936 25 | 817 75 | 887 95 | 871 75 | 616 25 | | | 5,298 85 |
| Fuel..... | | | 148 75 | | | | 132 90 | | | | 281 65 |
| Contingencies..... | 57 69 | | 48 47 | 76 12 | 250 62 | 60 87 | 213 86 | 78 69 | | | 785 63 |
| Totals..... | 549 16 | | 844 56 | 1,012 37 | 1,063 37 | 948 82 | 1,218 51 | 694 34 | | | 6,336 13 |

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Clay | 4,531 | ..... | 2,740 | 3,661 | 677 | 2,361 | 2,568 | 2,024 | ..... | ..... | ..... | ..... | 18,562 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RIVER St. Louis.—Improvements are being done in order to prevent or at least greatly minimize the disastrous effects of spring floods and after heavy rain over-
 flows.

1 GEORGE V., A. 1911

ANNUAL REPORT, from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'ST. MAURICE,' OWNER, DEPARTMENT OF PUBLIC WORKS.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. \$ cts. | Cost per Cubic Yard. \$ cts. |
|--|-------------------|-------------------|---------------------------------|----------------------|-------------------------|---------------------------------|
| | From | To | | | | |
| Mekinak, Champlain Co. | June 15. | July 30. | 6 feet. | 37,317 | 4,236 99 | 0-11 |
| Ile aux Morpions | Oct. 15. | Oct. 30. | | | | |
| Pointe à Trudel | July 31. | Sept. 7. | | | | |
| | Sept. 25. | Oct. 15. | | | | |
| | " 8. | Sept. 24. | | | | |

Total expenditure, \$4,236 99. Total cubic yards removed, 37,317. Cost per cubic yard, 0-11.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|-------------------------------|---------|---------|---------|---------|---------|------------|----------|-----------|-----------|------------------------------|----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages | 75 00 | 75 00 | 269 30 | 340 29 | 365 00 | 365 00 | 365 00 | 75 00 | | | 1,949 59 |
| Fuel | | | 187 44 | 259 43 | 259 43 | 259 43 | 259 43 | | | | 1,225 16 |
| Provisions | | | 55 47 | 104 00 | 104 00 | 104 00 | 104 00 | | | | 471 47 |
| Stores and equipment. | | | 53 90 | 21 50 | 11 95 | 6 81 | 7 65 | | | | 101 81 |
| Repairs | 177 25 | 143 20 | 40 67 | 33 28 | 11 41 | 28 89 | 2 10 | | | | 436 71 |
| Contingencies | | 5 00 | 8 25 | 1 00 | 4 75 | 8 24 | 22 13 | 2 88 | | | 52 25 |
| Totals | 252 25 | 223 20 | 615 03 | 779 50 | 756 54 | 772 28 | 760 31 | 77 88 | | | 4,236 99 |

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|---------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Boulders..... | | | | | | 1,334 | 379 | ..... | ..... | ..... | ..... | ..... | 1,713 |
| Gravel..... | | | | 4,587 | ..... | 1,340 | 455 | ..... | ..... | ..... | ..... | ..... | 6,682 |
| Clay..... | | | 3,122 | 1,606 | ..... | 1,334 | 376 | ..... | ..... | ..... | ..... | ..... | 6,528 |
| Sand..... | | | 939 | 9,861 | 9,305 | 1,334 | 955 | ..... | ..... | ..... | ..... | ..... | 22,391 |
| Totals..... | | | 4,061 | 15,944 | 9,305 | 5,342 | 2,665 | ..... | ..... | ..... | ..... | ..... | 37,317 |

NATURE OF DREDGING AT THE DIFFERENT LOCALITIES.

ST. MAURICE RIVER. The dredging at these places consisted in deepening the channel in the St. Maurice river

1 GEORGE V., A. 1911

ANNUAL REPORT, from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'RICHELIEU,' OWNER, DEPARTMENT OF PUBLIC WORKS.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|--------------|-------------------|---------------------------------|----------------------|---------------------|----------------------|
| | From | To | | | | |
| St. John, Ilerville district | May 15 | November 29 | 7 feet 5 inches... | 39,779 | \$ cts. 9,647 00 | \$ cts. 0 24 25 |

Total expenditure, \$9,647. Total cubic yards removed, 39,779. Cost per cubic yard, 0 24 25 cts.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|---------------------------|---------|----------|---------|---------|---------|------------|----------|-----------|-----------|------------------------------|----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages | 416 26 | 607 57 | 564 45 | 414 96 | 563 44 | 745 00 | 733 45 | 727 50 | 183 56 | 270 00 | 3,256 19 |
| Fuel | 93 98 | 278 84 | 89 50 | 104 78 | 83 29 | 142 85 | 110 26 | 92 03 | ... | ... | 995 53 |
| Pilotage and towage | ... | 197 57 | 217 89 | 142 47 | 126 25 | 283 80 | 234 63 | 230 08 | 16 00 | 461 08 | 2,309 75 |
| Contingencies | 93 98 | 278 84 | 89 50 | 104 78 | 83 29 | 142 85 | 110 26 | 92 03 | ... | ... | 995 53 |
| Totals | 604 22 | 1,362 82 | 961 34 | 766 99 | 886 27 | 1,314 50 | 1,188 60 | 1,131 64 | 199 56 | 1,231 06 | 9,647 00 |

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|---------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Clay... | ..... | 1,571 | 3,614 | 4,680 | 8,074 | 8,680 | 8,040 | 5,120 | ..... | ..... | ..... | ..... | 39,779 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

ST. JOUSE.—Dredging performed by dredges *Richelieu*, *Lamarck* and *Maher*.
 Work was done between the Central Vermont and Jones' bridge. Channel dredged 750 feet wide. When work was suspended the dredges were up to Jones' bridge.
 All material excavated was dumped on the east shore of the river at a distance of from 0 to 1½ miles above C. V. R. bridge.

1 GEORGE V., A. 1911

ANNUAL REPORT, from April 1, 1909, to March 31, 1910.—Continued.
DREDGE 'MABERLY,' OWNER, DEPARTMENT OF PUBLIC WORKS (RENTED)

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|---------|--------------|---------------------------------|----------------------|----------------------|----------------------|
| | From | To | | | | |
| St. Johns, Ilereville district | May 29. | November 20. | 7 feet 5 inches, ... | 55,735 | \$ cts. 19,378 47 | \$ cts. 0 35-12 |

Total expenditure, \$19,378 47. Total cubic yards removed, 55,735. Cost per Cubic Yard, 0 35-12.
DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|--------------------------|---------|---------|---------|---------|---------|------------|----------|-----------|-----------|------------------------------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages..... | | 57 97 | 760 00 | 723 37 | 723 38 | 775 00 | 485 37 | 425 09 | | | 4,250 09 |
| Fuel..... | | 60 00 | 89 50 | 104 78 | 83 20 | 142 85 | 110 26 | 682 71 | | | 682 71 |
| Provisions (rental)..... | | | | | | | | | | | 13,769 91 |
| Repairs..... | | 60 00 | 89 50 | 104 78 | 83 29 | 142 85 | 110 26 | 92 03 | | | 682 71 |
| Contingencies..... | | 26 47 | 22 00 | 30 47 | 26 94 | 26 50 | 35 22 | 25 45 | | | 193 05 |
| Totals..... | | 204 44 | 961 00 | 963 40 | 916 30 | 1,667 20 | 980 74 | 694 88 | | | 19,578 47 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|-----------|-----------|-----------|-----------|-----------|----------------------|---------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Clay..... | 507 | 9,732 | 9,004 | 9,379 | 10,639 $\frac{1}{2}$ | 9,808 $\frac{1}{2}$ | 6,665 | | | | | | 55,735 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

For description see *Rechnen*.

SESSIONAL PAPER No. 19

ANNUAL REPORT, from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'LANARK. OWNER, DEPARTMENT OF PUBLIC WORKS (Rented).

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|------------------------------------|---------------|---------------------------------|----------------------|----------------------|----------------------|
| | From | To | | | | |
| St. John's, Iloilo district..... | May 31 | Nov. 20 | 7 feet 5 inches..... | 51,602 | \$ cts. 18,776 51 | \$ cts. 0 36 38 |
| Total expenditure, \$18,776 51. | Total cubic yards removed, 51,602. | | | | | |

DETAILS OF EXPENDITURE.

| | April. | | May. | | June. | | July. | | August. | | September. | | October. | | November. | | December. | | January, February and March. | | Totals. | |
|------------------------------------|--------|------|--------|------|--------|------|--------|------|---------|------|------------|------|----------|------|-----------|------|-----------|------|------------------------------|------|-----------|------|
| | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. |
| Wages..... | | | 60 67 | | 705 00 | | 732 90 | | 773 33 | | 725 00 | | 720 17 | | 481 03 | | | | | | 4,191 10 | |
| Fuel..... | | | 60 00 | | 89 50 | | 104 78 | | 83 29 | | 142 85 | | 110 26 | | 92 03 | | | | | | 682 71 | |
| Stores and equipment (rental)..... | | | 60 00 | | 89 50 | | 104 78 | | 83 29 | | 142 85 | | 110 26 | | 92 03 | | | | | | 12,923 93 | |
| Pilotage and towage..... | | | 40 81 | | 38 77 | | 42 00 | | 41 25 | | 40 75 | | 37 28 | | 48 20 | | | | | | 682 71 | |
| Contingencies..... | | | | | | | | | | | | | | | | | | | | | 289 06 | |
| Totals..... | | | 221 48 | | 922 77 | | 984 46 | | 981 16 | | 1,051 45 | | 977 97 | | 713 29 | | | | | | 18,776 51 | |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | | May. | | June. | | July. | | August. | | September. | | October. | | November. | | December. | | January, February, March. | | Totals. |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------------------------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Clay..... | 400 | 6,306 | 7,696 | 10,296 | 11,329 | 9,457 | 6,028 | | | | | | | | | | | | | | 51,602 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

For description see dredge *Richelieu*.

ANNUAL Report from April 1, 1909 to March 31, 1910—Continued.
DREDGE 'ALGONQUIN,' OWNER, GENERAL CONSTRUCTION COMPANY.

| Localities where Dredging was Performed | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|---|-------------------------------|--------------------|---------------------------------|----------------------|--------------|----------------------|
| | From. | To. | | | | |
| Saguenay River, Chicoutimi Co., | 14th July. | 31st October. | 18 feet. | 97,015 | \$ 32,031 13 | \$ cts. 0 33 |
| Chicoutimi, | (21st June. | 13th July. | 17 18 " | 15,594 | 6,066 05 | 0 39-09 |
| | (2nd November 15th November.. | 17-18 " | " | | | |

Total expenditure,.... \$38,127 18 Total cubic yards removed..... 112,609.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|------------------------------|--------------|
| Wages | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Contingencies | 55 00 | 1,895 15 | 135 00 | 130 00 | 130 00 | 6,989 13 | 153 75 | 92 50 | 2,110 85 | 696 25 | 37,430 93 |
| Totals | 1,860 15 | 7,462 55 | 9,345 38 | 7,119 13 | 10,136 62 | 2,203 35 | | | | | 38,127 18 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Total. |
|-----------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Gravel, clay and sand | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| | 4,310 | 22,070 | 28,355 | 21,905 | 30,655 | 5,714 | | | | | | | 112,609 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

SAGUENAY RIVER AND CHICOUTIMI.—Work was performed in Chicoutimi harbour and in the channel of the Saguenay river. The dredging done in the harbour was in front of the old wharf and in front of the extension to an average depth of 18 feet. Dredging in the channel was done to an average depth of 18 feet.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1909 to March 31, 1910—*Continued.*
 DREDGE, 'A. PELTER,' OWNER, WINDSOR DREDGING COMPANY.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|----------------|---------------|---------------------------------|----------------------|---------------------|----------------------|
| | From. | To. | | | | |
| Nasapee River, Lennox Co. | 9th September. | 11th October. | 12 feet. | 20,000 | \$ cts. 2,840 25 | \$ cts. 0.14 20 |

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|---------------|---------|---------|---------|---------|---------|------------|----------|-----------|-----------|------------------------------|------------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages. | | | | | | 12 00 | 28 25 | | | | \$ cts. 40 25 |
| Contingencies | | | | | | 1,624 00 | 1,176 00 | | | | 2,800 00 |
| Totals. | | | | | | 1,636 00 | 1,204 25 | | | | 2,840 25 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Total. |
|----------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Gravel, sand and mud | | | | | | 11,600 | 8,400 | | | | | | 20,000 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

NASAPEE RIVER. Work consisted in dredging to a depth of 12 feet below low water at various points in the river where most required, the cuts varying in width from 25 to 75 feet. The upper cut is 1,400 feet in length, the lower cut is 750 feet in length by 75 feet wide. An old wreck lying in the channel was also removed.

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'ARNOLDI,' OWNER, W. L. HORTON.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|----------|--------------|---------------------------------|----------------------|---------------------|----------------------|
| | From | To | | | | |
| Kincardine, Bruce Co. | May 15. | June 7. | 14-18 feet. | 11,780 | \$ cts. 4,180 00 | Cts. 35 1/2 |
| Goderich, Huron Co. | June 11. | December 14. | 20-22 feet. | 35,268 | 15,447 63 | 43 80 |

Total expenditure, \$19,627.63. Total cubic yards removed, 47,048.

DETAILS OF EXPENDITURE

| | April. | | May. | | June. | | July. | | August. | | September. | | October. | | November. | | December. | | January, February and March. | | Totals. | |
|---------------|--------|------|----------|------|----------|------|----------|------|----------|------|------------|------|----------|------|-----------|------|-----------|------|------------------------------|------|-----------|------|
| | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. |
| Wages. | | | 39 00 | | 85 00 | | 83 80 | | 79 50 | | 78 50 | | 80 50 | | 80 50 | | 43 53 | | | | 570 33 | |
| Contingencies | | | 2,859 50 | | 2,185 75 | | 1,910 30 | | 2,335 50 | | 2,011 10 | | 2,895 90 | | 3,227 00 | | 1,432 25 | | | | 19,057 80 | |
| Totals. | | | 2,898 50 | | 2,270 75 | | 1,994 10 | | 2,615 00 | | 2,089 60 | | 2,976 40 | | 3,307 50 | | 1,475 78 | | | | 19,627 63 | |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | | May. | | June. | | July. | | August. | | September. | | October. | | November. | | December. | | January. | | February. | | March. | | Totals. | |
|---------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Boulders, gravel, clay, sand and mud. | 8,170 | 6,245 | 5,458 | 1,850 | 3,026 | 8,274 | 9,220 | 4,065 | | | | | | | | | | | | | | | | | 46,338 | |
| Rock | | | | 472 | 298 | | | | | | | | | | | | | | | | | | | | 710 | |
| Totals. | 8,170 | 6,245 | 5,458 | 2,322 | 3,264 | 8,274 | 9,220 | 4,065 | | | | | | | | | | | | | | | | | 47,048 | |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

KINCARDINE—This work consisted in the widening and deepening of channel at outer entrance to harbour to a depth of 16 or 18 feet below low water level; two cuts to a depth of 14 feet below low water level; one cut along easterly and southerly side of inner harbour to a depth of 14 feet below low water level, and one cut along northerly side of inner harbour to a depth of 12 feet below low water level.

GODERICH—The greater portion of this work was done at outer entrance to harbour where removal was most urgently required. The depths in inner harbour was 19 to 20 feet; between piers 20 feet, and at outer entrance to piers 22 feet below low water level.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1909, to March 31, 1910 *Continued.*
DREDGE 'CAPITAL' OWNERS, DUFRESNE, TURCOTTE & MARCHELLEON

| Localities where dredging was performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|------------|---------------|---------------------------------|----------------------|--------------|----------------------------|
| | From | To | | | | |
| Batisuan River, Quebec Co. | June 2. | August 3. | 6 feet | 33,324 | \$ 5,531 19 | Cts. -17 1/2 -25 1/2 |
| Doucet's Landing, Nicolet Co. | August 31. | September 18. | 13 feet | 8,886 | 2,281 84 | |

Total expenditure, \$7,813.03. Total cubic yards removed, 42,210.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|--------------------|---------|---------|----------|----------|---------|------------|----------|-----------|-----------|------------------------------|---|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages..... | | | 78 00 | 81 00 | 9 00 | 40 34 | | | | | |
| Contingencies..... | | | 3,703 52 | 1,512 53 | 146 54 | 2,221 50 | | | | | |
| Totals..... | | | 3,781 52 | 1,593 53 | 156 14 | 2,261 84 | | | | | |
| | | | | | | | | | | | \$ cts. 228 94 7,584 09 7,813 03 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|--------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Clay and sand..... | | 21,766 | 10,630 | 954 | 8,794 | | | | | | | | 42,210 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

BATISUAN RIVER. Work consisted in making one cut 3,448 feet long, 25 feet wide and 6 feet deep at low water in the main channel above entrance of this river. Two other cuts were made in the main channel above the C. P. R. bridge. Total length, 1,873 feet, 25 feet wide and 6 feet deep at low water.

DOUCET'S LANDING. Work consisted in making seven cuts with a total length of 986 feet, 24 feet wide and 13 feet deep at low water, in front of the wharf.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'CENTRAL CITY,' OWNER, CANADA IMPROVEMENT CO.

| Localities where Dredging was Performed | DATE | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|---|---------|-----------|---------------------------------------|-------------------------|---------------------|-------------------------|
| | From | To | | | | |
| Hudson, Vaudreuil Co. | July 12 | August 16 | 9½ feet | 5,910 | \$ cts. 1,587 90 | Ctr. 26½ |

Total expenditure, \$1,587.90. Total cubic yards removed, 5,910.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|----------------|---------|---------|---------|---------|---------|------------|----------|-----------|-----------|---------------------------------------|----------|
| Wages. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Contingencies. | | | | 55 50 | 42 00 | 5 20 | | | | | 102 70 |
| | | | | 775 65 | 696 15 | | | | 13 40 | | 1,485 20 |
| Totals. | | | | 831 15 | 738 15 | 5 20 | | | 13 40 | | 1,587 90 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | March. | Totals. |
|------------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Hard pan and boulders. | | | | 2,955 | 2,705 | | | | | | | 5,660 |
| Rock. | | | | 125 | 125 | | | | | | | 250 |
| Totals. | | | | 3,080 | 2,830 | | | | | | | 5,910 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

HUTCHINSON.—Two cuts were made, 380 feet long each, 27 feet wide and 9½ feet at low water, deepening an approach to shore.

1 GEORGE V., A. 1911

ANNUAL REPORT from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'CHIEF,' OWNER, W. E. PHIN.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|-----------|-------------|---------------------------------|----------------------|--------------|----------------------|
| | From | To | | | | |
| Port Hope, Durham Co. | June 5 | June 26 | 12 feet | 26,716 | \$ cts. | Cts. |
| Gobourg, Northumberland and Durham Co. | June 29 | August 27 | 22 feet—23 feet. | 66,794 | 5,940 87 | .22 1/2 |
| Whitby, Ontario Co. | October 9 | November 13 | 17 feet. | 43,120 | 10,236 22 | .15 3/4 |
| | | | | | 9,588 24 | .22 1/2 |

Total expenditure, \$25,765.33. Total cubic yards removed, 136,630.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September | October. | November | December. | January, February and March. | Totals. |
|---------------|----------|----------|----------|---------|----------|-----------|----------|----------|-----------|------------------------------|-----------|
| — | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages | 63 35 | 83 82 | 81 30 | 60 74 | 41 10 | 4,315 08 | 5,171 32 | 4,356 18 | 25,765 33 | 380 31 | 25,435 02 |
| Contingencies | 6,308 62 | 5,457 00 | 4,131 00 | 52 00 | 5,171 32 | 5,282 06 | 5,282 06 | 4,356 18 | 25,765 33 | 380 31 | 25,435 02 |
| Totals | 6,371 97 | 5,540 82 | 4,212 30 | 52 00 | 5,282 06 | 5,282 06 | 5,282 06 | 4,356 18 | 25,765 33 | 380 31 | 25,435 02 |

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|--------------------------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Clay, stones, sand and mud . . . . . | ..... | ..... | 29,590 | 36,380 | 27,540 | ..... | 23,006 | 19,614 | ..... | ..... | ..... | ..... | 136,630 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

POPE HOLE.—Dredging at the entrance to the piers to a depth of 12 feet, a width of 125 feet and a length of 175 feet, also two shoal spots, one about 50 by 50 feet, and the other about 170 feet and an average width of 25 feet, all to a depth of 12 feet.

CONDUIT.—Widening and deepening the channel and approaches. Some 13 old piles along the westerly side of the east pier were removed. An oak fender was removed.

WHIRRY.—Excavation of four cuts averaging about 35 feet in width and about 1,250 feet in length to a depth of 17 feet.

1 GEORGE V., A. 1911

ANNUAL REPORT from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'DOMINION,' OWNER, GREAT LAKES DREDGING CO.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|---|--------------|------------------|---------------------------------|----------------------|-------------------------|--|
| | From | To | | | | |
| Port Arthur Harbour, Thunder Bay District..... | May 3 | May 21 | 22 feet. | 68,169 | \$ cts. | Cts. |
| Mission and Kaministiquia rivers, Thunder Bay District..... | May 22 | December 8 | 22 feet—25 feet. | 1,082,005 | 17,835 94 172,640 25 | .26 $\frac{1}{2}$.15 $\frac{1}{2}$ |

Total expenditure, \$190,476.19. Total cubic yards removed, 1,150,174.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|--------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|------------------------------|------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages..... | 164 00 | 104 00 | 108 00 | 194 00 | 104 00 | 104 00 | 104 00 | 208 00 | 53 00 | 949 00 | 949 00 |
| Contingencies..... | 19,673 17 | 17,263 05 | 25,567 89 | 28,875 06 | 30,547 81 | 30,547 81 | 30,547 81 | 29,347 95 | 7,706 61 | 189,627 19 | 189,627 19 |
| Totals..... | 19,837 17 | 17,407 05 | 25,675 89 | 29,979 06 | 30,651 81 | 30,651 81 | 30,651 81 | 29,555 95 | 7,759 61 | 190,476 19 | 190,476 19 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|--------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Clay and sand..... | 82,138 | 157,094 | 170,918 | 174,323 | 168,288 | 179,445 | 172,635 | 45,333 | ..... | ..... | ..... | ..... | 1,150,174 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

PORT ARTHUR.—Two cuts were dredged in channel to King's elevator, also in channel to Atikokan iron and smelter works alongside of C.N.R. coal docks, and on west side of the channel. At each place dredging was done to an average depth of 22 feet at low water.
MISSION AND KAMINISTQUIA RIVERS. See dredge 'No. 3,' Great Lakes Dredging Co.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1909, to March 31, 1910. — *Continued.*
 DREDGE 'DUKE OF YORK,' OWNER, W. J. POUPHRE CO.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|---------|----------|---------------------------------|----------------------|--------------|----------------------|
| | From | To | | | | |
| Riviere du Loup (Louisville) | June 1. | July 29. | 4-6 feet. | 24,283 | \$ 5,718 12 | Cts. 237 1/2 |
| Total cubic yards removed, 24,283. | | | | | | |
| Total expenditure, \$5,718.12 | | | | | | |

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|--------------------|---------|---------|----------|----------|---------|------------|----------|-----------|-----------|------------------------------|----------|
| Wages..... | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Contingencies..... | 11,233 | 11,281 | 3,007 91 | 2,501 21 | 38 00 | | | | | | 171 00 |
| Totals..... | 13,062 | 11,281 | 3,007 91 | 2,582 21 | 38 00 | | | | | | 5,547 12 |
| | | | | | | | | | | | 5,718 12 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|----------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Clay and sand. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Cast over..... | | | 11,233 | 11,281 | | | | | | | | | 22,514 |
| Totals..... | | | 13,062 | 11,281 | | | | | | | | | 1,769 |
| | | | | | | | | | | | | | 24,283 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RIVIERE DU LOUP (LOUISVILLE).—Work consisted in making thirteen cuts. Six, 200 feet long, and one 500 feet long in front of the new wharf, two 1,300 feet long in front of Tourville wharf, two 250 feet long at the boom entrance and two 140 feet and 100 feet long each in the main channel towards the entrance of the river. All cuts were made to a width of 25 feet and a depth of 6 feet at low water.

1 GEORGE V., A. 1911

ANNUAL Report from April 1, 1909, to March 31, 1910.—Continued.

DREDGE 'E. HALL, NO. 1,' OWNER, CAPE BRETON DREDGING CO.

| Localities where Dredging was performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|------------|--------------|---------------------------------|----------------------|-------------------|----------------------|
| | From | To | | | | |
| Rondeau, Kent Co. | June 3. | July 28. | 20-22 feet. | 35,003 | \$ cts. 11,732 49 | Cts. 33 1/2 |
| Port Burwell, Elgin Co. | October 1. | November 13. | 20-21 " | 18,712 | 7,423 68 | 39 1/2 |

Total expenditure, \$19,156.17. Total cubic yards removed, 53,715.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|--------------------|---------|---------|----------|----------|---------|------------|----------|-----------|-----------|------------------------------|-----------|
| Wages..... | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Contingencies..... | | | 86 25 | 45 25 | | | 78 00 | 48 00 | | | 307 50 |
| | | | 4,857 27 | 6,683 72 | | | 5,981 04 | 1,316 64 | | | 18,848 67 |
| Totals..... | | | 4,943 52 | 6,788 97 | | | 6,059 04 | 1,364 64 | | | 19,156 17 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Total. |
|--------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Clay and sand..... | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| | | | 14,719 | 20,284 | | | 15,336 | 3,376 | | | | | 53,715 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RONDEAU.—A channel at the outer entrance to piers was made 150 feet wide with an average length of 400 feet and a depth of 21 feet below low water. Also the partial dredging of a turning basin in inner harbour to a depth of 20 feet at low water.

PORT BURWELL.—Work consisted in removing 18,065 cubic yards of sand from the north end of harbour and a shoal left by Dredge 'Industry' in the winding basin, also removing 2,647 cubic yards in the entrance channel.

SESSIONAL PAPER No. 19

ANNUAL REPORT from April 1, 1909 to March 31, 1910—Continued.
DREDGE 'ENTERPRISE,' OWNER, GREAT LAKES DREDGING CO.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|--------------|------------------|---------------------------------|----------------------|-------------------|----------------------|
| | From | To | | | | |
| Fort William, Thunder Bay District, Mission and Kaministiquia rivers | June 8 | October 31 | | 311,498 | \$ cts. 79,431 08 | Cts. 25½ |

Total expenditure \$79,431.08. Total cubic yards removed 311,498.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January February and March. | Totals. |
|--------------------|--------------|--------------|-----------|-----------|-------------------|-------------------|-------------------|--------------|--------------|-----------------------------|-------------------|
| Contingencies..... | \$ cts. | \$ cts. | 14,815 50 | 15,231 91 | \$ cts. 17,067 75 | \$ cts. 15,600 00 | \$ cts. 16,685 92 | \$ cts. | \$ cts. | \$ cts. | \$ cts. 79,431 08 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|-----------|----------------|----------------|--------|--------|------------------|------------------|------------------|----------------|----------------|----------------|----------------|----------------|-------------------|
| Clay..... | Cub. yds. | Cub. yds. | 58,100 | 59,733 | Cub. yds. 67,050 | Cub. yds. 61,180 | Cub. yds. 65,435 | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. 311,498 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

FOUR WINDY.—In order to enable boats to reach Grand Trunk Pacific dredge it was necessary to utilize the suction dredge 'Enterprise' to bore a way through the stiff clay for the dipper dredges to follow, and in October a channel was ready for navigation from deep water to Grand Trunk Pacific elevator dock. This channel was 5,100 feet in length by an average width of 114 feet.

1 GEORGE V., A. 1911

ANNUAL REPORT from April 1, 1909 to March 31, 1910—Continued.
 DREDGE 'EXCURSION.' OWNER, CANADIAN DREDGING AND CONSTRUCTION CO.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|-----------------|----------------|---------------------------------|----------------------|--------------|----------------------|
| | From | To | | | | |
| Tiffin, Simcoe Co. | May 5 | June 12 | | | | |
| | June 22 | June 24 | | | | |
| | August 1 | September 6 | 18 feet—25 feet | 99,686 | 76,154 35 | 761 2 |
| | October 27 | November 16 | | | | |
| Victoria Harbour, Simcoe Co. | June 14 | June 19 | | | | |
| | June 25 | July 31 | 22 feet—25 feet | 159,824 | 41,994 80 | 261 1 |
| | Sept. 7—Oct. 26 | Nov. 17—Dec. 9 | | | | |

Total expenditure, \$118,149.15. Total cubic yards removed, 259,510.

DETAILS OF EXPENDITURE.

| | April. | | May. | | June. | | July. | | August. | | September. | | October. | | November. | | December. | | January February and March. | | Totals. | |
|---------------|--------|------|--------|------|--------|------|-------|------|---------|------|------------|------|----------|------|-----------|------|-----------|------|--------------------------------------|------|---------|------|
| | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. |
| Wages | | | 72 | 79 | 88 | 81 | 83 | 82 | 80 | 36 | 81 | 63 | 89 | 84 | 81 | 20 | 25 | 24 | | | 594 | 09 |
| Contingencies | | | 13,812 | 79 | 16,075 | 38 | 6,004 | 12 | 24,553 | 65 | 9,632 | 12 | 9,185 | 92 | 24,661 | 92 | 13,629 | 25 | | | 117,555 | 06 |
| Totals | | | 13,885 | 49 | 16,164 | 19 | 6,087 | 94 | 24,634 | 01 | 9,713 | 15 | 9,266 | 76 | 24,743 | 12 | 13,654 | 49 | | | 118,149 | 15 |

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September | October. | November | December | January. | February. | March. | Totals. |
|------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Boulders, gravel, clay | 47,630 | 30,187 | 47,817 | 6,360 | 25,503 | 44,535 | 17,101 | 6,542 | 225,785 | 33,775 | 259,510 | | |
| and sand..... | | 4,952 | 12 | 16,093 | 2,483 | 793 | 9,738 | 5,694 | | | | | |
| Rock..... | | | | | | | | | | | | | |
| Totals..... | 47,630 | 35,149 | 47,829 | 16,453 | 28,046 | 45,328 | 26,839 | 12,236 | | | | | |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

MIDLAND, TIPPIN. Work consisted in dredging in slip to Grand Trunk Pacific Elevator, the outer portion of which is 1,600 feet in length varying in width from 276 to 312 feet, also dredging a slip 600 feet long immediately in front of elevator, 180 feet wide with the exception of a corner of the northerly side some 200 feet long by 60 feet wide. All to a depth of 25 feet.

VICTORIA HARBOUR. — A slip was constructed which, when completed, will be 5,500 feet long, 600 feet in width and 25 feet deep.

1 GEORGE V., A. 1911

ANNUAL REPORT, from April 1, 1909, to March 31, 1910—Continued.

DREDGE 'FRANK,' OWNER, A. F. BOWMAN.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|---|---------------|---------------|---------------------------------|----------------------|-------------------|----------------------|
| | From. | To. | | | | |
| Owen Sound, Grey Co. | June 21 | June 28 | 17 feet. | 2,950 | \$ cts. 800 00 | Cts. 27 1/2 |
| Total expenditure, \$800.00. Total cubic yards removed, 2,950. | | | | | | |

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|---------------------|---------|---------|---------|---------|---------|------------|----------|-----------|-----------|------------------------------|---------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages | | | 12 50 | | | | | | | | 12 50 |
| Contingencies | | | 787 50 | | | | | | | | 787 50 |
| Totals | | | 800 00 | | | | | | | | 800 00 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Clay | | | 2,950 | | | | | | | | | | 2,950 |

NATURE OF DREDGING PERFORMED AT DIFFERENT LOCALITIES.

OWEN SOUND.—Work consisted in the removal of a shoal alongside the C. P. Ry., freight sheds. Ten old piles that were in front of the Government Revetment wall were removed.

SESSIONAL PAPER No. 19

ANNUAL REPORT, from April 1, 1909, to March 31, 1910—Continued.
DREDGE FRANK, OWNER, GREAT LAKES DREDGING CO.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|---|-------------------|-----------------|---------------------------------|----------------------|----------------------|----------------------|
| | From. | To. | | | | |
| Mission and Kaminstiquia rivers. (Thunder Bay District)..... | September 25..... | December 8..... | 25 feet..... | 115,058 | \$ cts. 20,131 80 | Cts. 193½ |
| Total expenditure, \$20,131.80. Total cubic yards removed, 115,058. | | | | | | |

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|--------------------|---------|---------|---------|---------|---------|------------|----------|-----------|-----------|------------------------------|-----------|
| Wages..... | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Contingencies..... | ..... | ..... | ..... | ..... | ..... | 20 00 | 104 00 | 104 00 | 80 00 | ..... | 308 00 |
|  | ..... | ..... | ..... | ..... | ..... | 1,320 28 | 8,962 78 | 7,837 00 | 1,703 74 | ..... | 19,823 80 |
| Totals..... | ..... | ..... | ..... | ..... | ..... | 1,340 28 | 9,066 78 | 7,941 00 | 1,783 74 | ..... | 20,131 80 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Clay..... | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
|  | ..... | ..... | ..... | ..... | ..... | 6,928 | 52,008 | 46,100 | 10,022 | ..... | ..... | ..... | 115,058 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

MISSION AND KAMINSTIQUIA RIVERS.—(See Dredge 'No. 5,' Great Lakes Dredging Co.)

1 GEORGE V., A. 1911

ANNUAL Report from April 1, 1909, to March 31, 1910—*Continued.*
DREDGE 'HACKETT,' OWNER, PENETANGUISENE DREDGING CO.

| Localities where Dredging was Performed. | DATE. | | Depth of Water max below Zero. | Cubic Yards Removed. | Expenditure. \$ cts. | Cost per Cubic Yard. Cts. |
|--|---------------|---------------|--------------------------------------|-------------------------|-----------------------------|-------------------------------------|
| | From | To | | | | |
| Fesserton to Coldwater, Simcoe Co. | June 10 | Nov. 14 | 10 feet. | 95,265 | \$ 14,845 68 | 15½ |
| Total cubic yards removed, 95,265. | | | | | | |
| Total expenditure, \$14,845. 68. | | | | | | |

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|---------------------|---------|---------|----------|----------|----------|------------|----------|-----------|-----------|---------------------------------------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages..... | ..... | ..... | 56 01 | 87 00 | 91 84 | 89 75 | 87 84 | 43 50 | ..... | ..... | 455 94 |
| Contingencies ..... | ..... | ..... | 1,239 75 | 2,611 00 | 3,654 00 | 1,782 00 | 3,717 00 | 1,386 00 | ..... | ..... | 14,389 74 |
| Totals..... | ..... | ..... | 1,295 75 | 2,698 00 | 3,745 84 | 1,871 75 | 3,804 84 | 1,429 50 | ..... | ..... | 14,845 68 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Boulders, clay and sand ..... | ..... | ..... | 8,265 | 16,740 | 24,360 | 11,880 | 24,780 | 9,240 | ..... | ..... | ..... | ..... | 95,265 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

FESSERTON TO COLDWATER.—A cut 4,460 feet long, 30 feet wide and to a depth of 10 feet at low water was made between these places in the main channel.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'KENNAQUHAIR,' OWNER, W. E. PHIN.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|-----------|------------|---------------------------------|----------------------|-------------------|----------------------|
| | From | To | | | | |
| Port Arthur, Thunder Bay district | July 8 .. | Nov. 22 .. | 22-25 feet. | 314,089 | \$ cts. 40,875 82 | Cts. 13 |
| Total expenditure, \$40,875.82. Total cubic yards removed, 314,089 | | | | | | |

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|---------------------|---------|---------|---------|----------|-----------|------------|----------|-----------|-----------|------------------------------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages | 108 00 | 108 00 | 108 00 | 108 00 | 104 00 | 104 00 | 104 00 | 84 00 | 84 00 | ..... | 612 00 |
| Contingencies ..... | ..... | ..... | ..... | 5,620 73 | 9,886 65 | 9,926 31 | 7,854 08 | 6,966 65 | ..... | ..... | 40,253 82 |
| Totals ..... | ..... | ..... | 108 00 | 5,728 73 | 10,000 65 | 10,030 31 | 7,938 08 | 7,050 65 | ..... | ..... | 40,875 82 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|-----------------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Hard pan, clay & sand ..... | ..... | ..... | 43,646 | 78,355 | 78,087 | 60,416 | 53,585 | ..... | ..... | ..... | ..... | ..... | 314,089 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

PORT ARTHUR.—Dredging was performed in Fish Dock slip channel to Thunder Bay elevator and extension of coal dock channel from the Atikokan ore and smelter works property, southwards. In the two last mentioned channels, dredging was carried down to 25 feet below zero. In channel alongside elevator it was necessary to do some casting over. Further dredging will be required there next season, as the material being of a sandy nature, will wash into the channel from the sides.

Dredging at Fish Dock slip was made partly to 22 feet and at shore end 17 to 14 feet only to accommodate the smaller steamers. Dredging in this slip is not yet completed.

1 GEORGE V., A. 1911

ANNUAL Report from April 1, 1909 to March 31, 1910—Continued.
DREDGE 'LITTLE GIANT' OWNER, L. COHEN & SON.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|-------------------|-----------------------|---------------------------------|----------------------|---------------------|----------------------------|
| | From | To | | | | |
| Rigaud, Vaudreuil Co | June 21 | September 8 | 8 feet. | 30,802 | \$ cts. 7,436 68 | Cts. 24 $\frac{11}{16}$ |

Total cubic yards removed, 30,802.

Total expenditure, \$7,636 68.

DETAILS OF EXPENDITURE.

| | April. | | May. | | June. | | July. | | August. | | September. | | October. | | November. | | December. | | January, February and March. | | Totals. | |
|-------------------------|--------|------|------|------|--------|------|----------|------|----------|------|------------|------|----------|------|-----------|------|-----------|------|------------------------------|------|----------|------|
| | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. |
| Wages | | | | | 36 00 | | 84 25 | | 78 00 | | 31 55 | | | | | | | | | | 229 80 | |
| Contingencies | | | | | 268 80 | | 3,792 48 | | 2,772 72 | | 572 88 | | | | | | | | | | 7,406 88 | |
| Totals | | | | | 304 80 | | 3,876 73 | | 2,850 72 | | 604 43 | | | | | | | | | | 7,636 68 | |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | | May. | | June. | | July. | | August. | | September. | | October. | | November. | | December. | | January. | | February. | | March. | | Totals. | |
|----------------------------------|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|------------|--|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|
| | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | |
| Hard pan, clay & stone | | | | | 1,120 | | 15,802 | | 11,553 | | 2,387 | | | | | | | | | | | | | | 30,802 | |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RIGAUD.—Two cuts were made 2,983 feet long, each 30 feet wide and 9 feet deep at low water below the C. P. Ry. bridge in River La Grasse.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1909 to March 31, 1910—Continued.
DREDGE 'MEADE,' OWNER, TIDE C. S. BOONE, DREDGING AND CONSTRUCTION COMPANY.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|-------------|--------------|---------------------------------|----------------------|---------------------|----------------------|
| | From | To | | | | |
| Little Current, Algoma District | May 4 | May 24 | 22 feet. | 4,728½ | \$ cts. 5,985 24 | \$. cts. 1.26 ½ |

Totals expenditure, \$5,985 24. Total cubic yards removed, 4,728½.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|--------------------|------------------|---------------------|---------|---------|---------|------------|----------|-----------|-----------|------------------------------|------------------|
| Wages..... | \$ cts. 44 76 | \$ cts. 5,940 48 | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. 44 76 |
| Contingencies..... | | | | | | | | | | | 5,940 48 |
| Totals..... | | 5,985 24 | | | | | | | | | 5,985 24 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|-------------|---------------------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Gravel..... | Cub. yds. 1,618½ | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Rock..... | | 3,110 | | | | | | | | | | | 3,110 |
| Totals..... | | 4,728½ | | | | | | | | | | | 4,728½ |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

LITTLE CURRENT.—Work consisted in removing a segment in the north side of the original channel, the chord of which was 700 feet in length and the height of arc 75 feet. The main channel was also cleaned out to a depth of 22 feet at low water.

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'MOGUL,' OWNER, L. COHEN & SON.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|------------------------------------|--------------|---------------------------------|----------------------|--------------|----------------------|
| | From | To | | | | |
| St. Pierre les Becquets, Nicolet Co. | June 8. | July 31. | 8 feet. | 26,882 | \$ 7,841 03 | Cts. 29.4 |
| St. Placide, Two Mountains Co. | October 26. | November 20. | 10 feet. | 10,360 | 2,227 40 | 21.5 |
| Total expenditure, \$10,068.43. | Total cubic yards removed, 37,242. | | | | | |

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | Totals. |
|--------------------|---------|---------|----------|----------|---------|------------|----------|-----------|-----------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages..... | | | 69 00 | 75 00 | | | | | | 144 00 |
| Contingencies..... | | | 2,354 38 | 5,342 65 | | | 385 07 | 1,842 33 | | 9,924 43 |
| Totals..... | | | 2,423 38 | 5,417 65 | | | 385 07 | 1,842 33 | | 10,068 43 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|------------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Hard pan and clay..... | | | 8,522 | 18,360 | 1,791 | 8,569 | | | | | | | 37,242 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

ST. PIERRE LES BECQUETS.—Work consisted in making three cuts with a total length of 1,895 feet, a width of 30 feet, and a depth of 8 feet at low water. These cuts were made in front of the wharf leading to main channel.

ST. PLACIDE.—Work was next performed making two cuts 825 feet long each, 30 feet wide and 10 feet deep at low water. This work started from the main channel leading to the wharf.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'MONARCH' OWNER, THE CANADIAN DREDGING AND CONSTRUCTION CO.

| Localities where Dredging was Performed | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|---|--|--|---------------------------------|----------------------|--------------|----------------------|
| | From | To | | | | |
| Victoria Harbour, Simcoe Co., | May 5, August 3, November 1, | June 12, September 18, December 9, | 18 26 feet, | 149,311 | \$ 55,603 80 | Cts. 37 5/8 |
| Tiffin, Midland, Simcoe Co., | June 14, September 20, October 31, | August 2, October 31, | 25 feet, | 91,680 | 60,885 53 | 667 |

Total expenditure, \$116,489 42. Total cubic yards removed, 240,991.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|----------------------|-------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|------------------------------|----------------------|
| Wages, | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Contingencies, | 71 26 5,222 50 | 73 43 19,275 50 | 91 50 12,639 40 | 80 84 7,371 00 | 81 03 11,990 87 | 81 03 25,023 80 | 81 30 15,821 25 | 80 28 15,821 25 | 34 16 11,550 00 | 34 16 11,550 00 | 503 80 115,895 62 |
| Totals, | 9,293 76 | 19,349 23 | 12,750 89 | 7,451 84 | 15,071 90 | 25,103 10 | 15,904 53 | 11,584 16 | 116,489 42 | 116,489 42 | |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | | December. | January. | February. | March. | Totals. |
|--------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Gravel | 30,220 | 30,220 | 40,720 | 8,360 | 40,650 | 24,329 | 30,420 | 22,698 | 400 | 296,307 | 31,594 | 240,901 | 240,901 | 240,901 |
| Rock | 2,420 | 3,200 | 4,540 | 1,051 | 7,290 | 5,311 | 5,772 | 5,100 | 5,700 | 5,700 | 5,700 | 5,700 | 5,700 | 5,700 |
| Totals | 32,640 | 33,640 | 45,260 | 9,411 | 47,940 | 29,640 | 37,620 | 28,470 | 5,700 | 302,007 | 37,294 | 376,601 | 376,601 | 376,601 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.
Victoria Harbour—See dredge 'Excelsior'.
Tiffin (Midland)—See dredge 'Excelsior'.

1 GEORGE V., A. 1911

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.

DREDGE 'MOOSE' OWNER, RAINY RIVER DREDGING CO.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|------------------------------------|------------------|---------------------------------|----------------------|----------------------|----------------------|
| | From | To | | | | |
| Rainy River, Rainy River District..... | July 26 | October 16 | 10 feet | 57,144 | \$ cts. 21,493 43 | Cts. 37.61 |
| Total expenditure, \$21,493.43. | Total cubic yards removed, 57,144. | | | | | |

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|---------------------|---------|---------|---------|----------|----------|------------|----------|-----------|-----------|------------------------------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages | | | | 39 90 | 104 00 | 104 00 | 90 00 | | | | 337 90 |
| Contingencies | | | | 1,298 33 | 8,835 60 | 7,859 95 | 3,161 65 | | | | 21,155 53 |
| Totals | | | | 1,338 23 | 8,939 60 | 7,963 95 | 3,251 65 | | | | 21,493 43 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|--------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Clay and sand..... | | | | 3,509 | 23,880 | 21,210 | 8,545 | | | | | | 57,144 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RAINY RIVER.—Dredging consisted in removing shoal areas which obstructed entry to towing channel to a depth of ten feet below low water level. Three cuts 2,400 feet in length were made.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'No. 1.' OWNER, A. F. BOWMAN.

| Localities where Dredging was Performed. | DATE. | | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|-------|------------|----------------------|--------------|----------------------|
| | From | To | | | |
| Sault Ste. Marie, Algoma District | May 6 | November 9 | 23,569 | \$ 71,535 91 | \$ cts. 3.03½ |

Total cubic yards removed, 23,569.

Total expenditure, \$71,535.91.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|----------------------|---------|-----------|-----------|-----------|----------|------------|----------|-----------|-----------|------------------------------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages | 33 00 | 82 91 | 80 20 | 80 84 | 78 56 | 79 80 | 79 68 | 31 32 | | | 546 31 |
| Stores and equipment | | | 30 60 | | | | | | | | 30 00 |
| Contingencies | | 15,261 78 | 20,444 40 | 17,797 08 | 9,161 10 | 5,377 89 | 1,843 20 | 1,071 15 | | | 70,959 60 |
| Totals | 33 00 | 15,344 69 | 20,554 60 | 17,877 92 | 9,239 66 | 5,457 69 | 1,922 88 | 1,105 47 | | | 71,535 91 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|----------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Hard pan rock | 4,665 | 6,313 | 5,501 | 2,804 | 1,660 | 538 | 341 | | | | | | 21,912 |
| Boulders | 304 | 392 | 199 | 93 | 70 | 99 | | | | | | | 1,067 |
| Other material | 29 | 185 | 290 | 77 | | | | | | | | | 590 |
| Totals | 5,028 | 6,800 | 5,999 | 2,957 | 1,807 | 637 | 341 | | | | | | 23,569 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

SAULT STE. MARIE.—A channel was constructed 260 feet wide, extending from the Government wharf westerly until it intersects the ship channel to the canal on the Canadian side; also the removal of a number of shoal spots in the approach to the Government wharf from the eastward.

1 GEORGE V., A. 1911

ANNUAL Report from April 1, 1909, to March 31, 1910—*Continued.*
DREDGE 'No. 3.' OWNER, DOMINION DREDGING CO.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|----------|---------------|---------------------------------|----------------------|---------------------|----------------------|
| | From | To | | | | |
| L'Assomption, L'Assomption Co | July 28. | September 17. | 14 feet. | 26,065 | \$ cts. 4,540 72 | Cts. 172½ |
| Total cubic yards removed, 26,065. | | | | | | |
| Total expenditure, \$4,540.72. | | | | | | |

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | | September. | October. | November. | | December. | | January, February and March. | Totals. |
|---------------------|---------|---------|---------|---------|----------|---------|------------|----------|-----------|---------|-----------|---------|------------------------------|----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages | | | | 36 00 | 78 00 | 48 00 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 162 00 |
| Contingencies | | | | 280 06 | 3,472 02 | 605 51 | ..... | ..... | ..... | ..... | 21 13 | ..... | ..... | 4,378 72 |
| Totals | | | | 316 06 | 3,550 02 | 633 51 | ..... | ..... | ..... | ..... | 21 13 | ..... | ..... | 4,540 72 |

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|----------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Boulders and clay... | ..... | ..... | ..... | 1,672 | 29,718 | 3,615 | ..... | ..... | ..... | ..... | ..... | ..... | 295,005 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

L'Assomption. — Work consisted in making six cuts with a total length of about 2,500 feet, 35 feet wide and 14 feet deep at low water. This work was made in the main channel crossing the Ottawa river.

1 GEORGE V., A. 1911

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.
 DREDGE 'No. 5.' OWNER, GREAT LAKES DREDGING CO.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | | Cost per Cubic Yard. |
|--|----------|------------|---------------------------------|----------------------|--------------|------|----------------------|
| | From | To | | | \$ | cts. | |
| Port Arthur, Thunder Bay District. | April 24 | May 15 | ..... | 40,603 | 10,660 | 78 | 26 1/2 |
| Mission and Kaumistiquia Rivers, Thunder Bay District. | May 17 | December 8 | ..... | 708,023 | 125,138 | 71 | 17 1/2 |

Total expenditure, \$135,799.49. Total cubic yards removed, 748,626.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|---------------------|----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|------------------------------|------------|
| | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ | \$ |
| | cts. | cts. | cts. | cts. | cts. | cts. | cts. | cts. | cts. | cts. | cts. |
| Wages..... | 28 00 | 128 00 | 208 00 | 308 00 | 104 00 | 121 60 | 104 00 | 104 00 | 53 00 | ..... | 958 60 |
| Contingencies | 2,751 32 | 17,421 00 | 17,477 05 | 24,646 76 | 19,689 74 | 14,938 74 | 18,826 48 | 15,405 06 | 3,424 74 | ..... | 134,849 89 |
| Totals..... | 2,779 32 | 17,549 00 | 17,685 05 | 24,754 76 | 19,793 74 | 15,120 34 | 18,930 48 | 15,509 06 | 3,677 74 | ..... | 135,799 49 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|--------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Clay and sand..... | 10,582 | 86,583 | 107,455 | 113,254 | 111,989 | 96,079 | 110,744 | 99,618 | 21,322 | ..... | ..... | ..... | 748,626 |

SESSIONAL PAPER No. 19

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

PORT ARTHUR.—(See Dredge 'Dominion,' Great Lakes Dredging Co.),
MISSION AND KAMINISTiquia RIVERS.—(Dredge 'Dominion,' No. 8, 'No. 5,' 'No. 6,' 'No. 15,' and 'Frank.')
BLACK'S ELEVATOR.—A section 500 feet in length by 200 feet in width was deepened in front of this elevator.
CANADIAN NORTHERN RAILWAY DOCK.—One dredge cut was made along face of this dock removing a shoal area 500 feet long by 30 feet wide.
GRAND TRUNK PACIFIC DOCK.—One cut was made along face of this dock being 300 feet long by 30 feet wide.
WESTERN TERMINAL ELEVATOR DOCK.—One cut 300 feet long by 30 feet wide was made along face of this dock.
GRAND TRUNK PACIFIC DOCK TO ELEVATOR 'D.'—The full width of river from Grand Trunk Pacific Dock to Elevator 'D' was dredged over and deepened to grade (25 feet below zero) being a length of 7,000 feet and an average width of 300 feet.
OPPOSITE McKELGAR RIVER.—A section 900 feet in length by 200 feet in width was deepened off the entrance to this river removing shoal areas.
CANADIAN PACIFIC RAILWAY COAL DOCK.—One dredge cut 400 feet in length and 30 feet in width was made along face removing shoal areas.
Two cuts were made opposite C. P. R. hard coal shed on south side of river removing shoal areas, said cuts being 700 feet in length by 50 feet in width.
MISSION RIVER.—The Mission river was deepened to grade from the junction with Kaministiquia river to shore line of Thunder Bay, being a length of 2 miles 400 feet and an average width of 287 feet.
GRAND TRUNK PACIFIC BASIN.—A vast amount of work was done in this section, most of the dredges being continually employed in this locality. An area of 1,420 feet in length by 442 feet in width of solid bank was removed and this section deepened to grade.
The balance of Mission basin, already dredged, was deepened to grade, being a length of 1,900 feet and an average width of 788 feet.

1 GEORGE V., A. 1911

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.
DREDGE No. 6. OWNER, GASPARD DE SERRES.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|------------------------------------|---------|---------------------------------|----------------------|--------------|----------------------|
| | From | To | | | | |
| Verdun, Jacques Cartier County. | July 14 | Nov. 23 | 8 feet. | 32,335 | \$ 11,156 28 | Cts. 34½ |
| Total expenditure, \$11,156.28. | Total cubic yards removed, 32,335. | | | | | |

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|----------------|---------|---------|---------|----------|----------|------------|----------|-----------|-----------|------------------------------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages..... | | | | 65 40 | 79 25 | 42 00 | 78 00 | 33 00 | 8 50 | | 396 75 |
| Contingencies. | | | | 3,261 68 | 3,315 75 | 1,256 10 | 1,957 00 | 1,067 00 | 32 40 | | 10,849 53 |
| Totals | | | | 3,327 68 | 3,395 00 | 1,278 10 | 2,015 00 | 1,100 00 | 40 50 | | 11,156 28 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|----------------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Hardpan and bould- ers. | | | | 7,600 | 9,095 | 6,352 | 6,368 | 2,900 | | | | | 32,335 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

VERDUN.—Work consisted in making four cuts, two 500 feet long each and two 300 feet long, 35 feet wide and 8 feet deep at low water. This work was performed in the main channel at foot of Ile aux Herons.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'No. 6.' OWNER, GREAT LAKES DREDGING CO.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|---|--------------|--------------|---------------------------------|----------------------|----------------------|----------------------|
| | From | To | | | | |
| Nipigon river, Thunder Bay District..... | May 19..... | June 12..... | 19 feet..... | 45,638 | \$ cts. 20,629 30 | Cts. 451 |
| Mission and Kaministiquia rivers, Thunder Bay District..... | June 14..... | Nov. 27..... | 25 "..... | 457,824 | 72,046 84 | 151½ |

Total expenditure, \$92,676.14. Total cubic yards removed, 503,462.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|--------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|------------------------------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages..... | 46 10 | 46 10 | 94 10 | 108 00 | 268 00 | 121 60 | 104 00 | 96 00 | ..... | ..... | 777 80 |
| Contingencies..... | 12,578 90 | 12,345 52 | 10,471 60 | 15,861 38 | 13,779 35 | 15,029 70 | 12,123 89 | 13 00 | ..... | ..... | 91,898 34 |
| Totals..... | 12,620 00 | 12,439 62 | 10,479 60 | 16,169 38 | 13,900 95 | 15,133 70 | 12,219 89 | 13 00 | ..... | ..... | 92,676 14 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|--------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Clay and sand..... | 27,942 | 66,650 | 80,029 | 98,039 | 81,035 | 88,410 | 71,317 | ..... | ..... | ..... | ..... | ..... | 503,462 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

NIPIGON RIVER—A channel was completed through sand-bar, 1.640 feet long and 200 feet wide.
MISSION AND KAMINISTQUIA RIVERS—See dredge No. 5, Great Lakes Dredging Co.

1 GEORGE V., A. 1911

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'No. 8' OWNER, GREAT LAKES DREDGING CO.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|---|--------|---------|---------------------------------|----------------------|--------------|----------------------|
| | From | To | | | | |
| Port Arthur, Thunder Bay District. | May 12 | May 22 | 22 feet. | 18,177 | \$ cts. | Cts. |
| Mission and Kamistiquia rivers, Thunder Bay District. | " 24 | Dec. 8. | 22 feet, 25 feet | 522,515 | \$ cts. | -24 1/2 -21 9/16 |

Total expenditure, \$119,536.21. Total cubic yards removed, 540,692.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|----------------|---------|----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|------------------------------|------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages. | | 52 00 | 104 00 | 108 00 | 104 00 | 208 00 | 104 00 | 104 00 | 45 00 | | 829 00 |
| Contingencies. | | 9,281 17 | 21,738 75 | 29,797 79 | 19,674 02 | 12,150 82 | 15,490 63 | 13,867 71 | 5,706 32 | | 118,707 21 |
| Totals. | | 9,333 17 | 21,842 75 | 29,905 79 | 19,778 02 | 12,358 82 | 15,594 63 | 13,971 71 | 5,751 32 | | 119,536 21 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|----------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Clay and sand. | 44,972 | 103,912 | 94,637 | 91,671 | 74,696 | 58,790 | 51,219 | 15,796 | 1,060 | | | | 585,672 |
| Rock. | | | | | | 2,055 | 1,905 | | | | | | 5,920 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

PORT ARTHUR—See dredge *Domination*.

MISSION AND KAMISTQUIA RIVERS—See dredge *No. 5*.

SESSIONAL PAPER No. 19

DREDGE 'No. 9.' OWNER, THE CANADIAN DREDGING AND CONSTRUCTION CO.

| Localities where Dredging was Performed. | DATE. | | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|------------|--------------|----------------------|----------------------|----------------------|
| | From | To | | | |
| Victoria Harbour, Simcoe County | May 6..... | Nov. 27..... | 147,975 | \$ cts. 19,102 41 | Cts. 12½ |

Total expenditure, \$19,102 41. Total cubic yards removed, 147,975.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|---------------------|----------|----------|----------|---------|----------|------------|----------|-----------|-----------|------------------------------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages | 76 34 | 88 81 | 91 78 | 83 22 | 94 78 | 88 30 | 82 28 | 82 28 | 82 28 | 82 28 | 605 54 |
| Contingencies | 2,087 50 | 3,012 50 | 3,146 87 | 846 25 | 2,900 00 | 3,956 25 | 2,587 50 | 2,587 50 | 2,587 50 | 2,587 50 | 18,496 87 |
| Totals | 2,163 84 | 3,101 34 | 3,238 65 | 889 47 | 2,994 78 | 4,044 55 | 2,663 78 | 2,663 78 | 2,663 78 | 2,663 78 | 19,102 41 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|--------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Clay and mud | 16,700 | 24,100 | 25,175 | 6,450 | 23,200 | 31,650 | 26,700 | 26,700 | 26,700 | 26,700 | 26,700 | 26,700 | 147,975 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

VICTORIA HARBOUR—See dredge *Excelsior*.

1 GEORGE V., A. 1911

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'No. 14,' OWNER, C. S. BOONE, DREDGING AND CONSTRUCTION CO.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|-------------|----------------|---------------------------------|----------------------|----------------------|----------------------|
| | From | To | | | | |
| Little Current, Algoma District | May 5 | Sept. 20 | 22 feet | 30,975 | \$ cts. 55,526 97 | \$ cts. 1 79½ |

Total expenditures, \$55,526.97. Total cubic yards removed, 30,975.

DETAILS OF EXPENDITURE.

| | April. | | May. | | June. | | July. | | August. | | September. | | October. | | November. | | December. | | January, February and March. | | Totals. | |
|--------------------|--------|------|-----------|------|----------|------|-----------|------|-----------|------|------------|------|----------|------|-----------|------|-----------|------|------------------------------|------|-----------|------|
| | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. |
| Wages..... | | | 44 76 | | 93 21 | | 97 88 | | 93 82 | | 61 80 | | | | | | | | | | 391 47 | |
| Contingencies..... | | | 16,153 50 | | 5,740 50 | | 13,750 50 | | 10,346 25 | | 9,144 75 | | | | | | | | | | 55,135 50 | |
| Totals..... | | | 16,198 26 | | 5,833 71 | | 13,848 38 | | 10,440 07 | | 9,206 55 | | | | | | | | | | 55,526 97 | |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | | May. | | June. | | July. | | August. | | September. | | October. | | November. | | December. | | January. | | February. | | March. | | Totals. | |
|-----------|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|------------|--|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|
| | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | |
| Rock..... | 9,075 | | 9,075 | | 3,225 | | 7,725 | | 5,812½ | | 5,137½ | | | | | | | | | | | | | | 30,975 | |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

LITTLE CURRENT.—See dredge *Made*.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1909, to March 31, 1910. -Continued.
DREDGE 'No. 15,' OWNER, GREAT LAKES DREDGING CO.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|---|---------------|-----------------|---------------------------------|----------------------|-------------------|-----------------------|
| | From | To | | | | |
| Port Arthur, Thunder Bay District. | April 15..... | May 31..... | 22-26 feet | 55,281 | \$ cts. 14,533 06 | Cts. 26 $\frac{7}{8}$ |
| Mission and Kaminitiquia Rivers, (Thunder Bay District) | June 7..... | December 8..... | 25 feet | 262,433 | 114,375 41 | 56 $\frac{1}{2}$ |

Total expenditure, \$128,908.47. Total cubic yards removed, 257,714.

DETAILS OF EXPENDITURE.

| | April. | | May. | | June. | | July. | | August. | | September. | | October. | | November. | | December. | | January, February and March. | | Totals. | |
|--------------------|----------|-----------|-----------|----------|-----------|-----------|-----------|-----------|----------|----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|----------|------------------------------|----------|------------|------------|
| | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. |
| Wages..... | 60 00 | 100 00 | 100 00 | 72 00 | 132 00 | 104 00 | 104 00 | 104 00 | 104 00 | 104 00 | 104 00 | 104 00 | 104 00 | 104 00 | 104 00 | 104 00 | 53 00 | 53 00 | 53 00 | 53 00 | 127,971 47 | 937 00 |
| Contingencies..... | 3,631 42 | 10,741 64 | 14,705 98 | 5,967 26 | 22,974 77 | 18,383 60 | 17,284 20 | 26,280 03 | 8,002 57 | 8,055 57 | 26,384 03 | 17,492 50 | 17,492 50 | 17,492 50 | 17,492 50 | 17,492 50 | 8,055 57 | 8,055 57 | 8,055 57 | 8,055 57 | 128,908 47 | 128,908 47 |
| Totals..... | 3,691 42 | 10,841 64 | 14,777 98 | 6,069 26 | 23,078 77 | 18,487 60 | 17,492 50 | 26,384 03 | 8,055 57 | 8,055 57 | 26,384 03 | 17,492 50 | 17,492 50 | 17,492 50 | 17,492 50 | 17,492 50 | 8,055 57 | 8,055 57 | 8,055 57 | 8,055 57 | 128,908 47 | 128,908 47 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | | May. | | June. | | July. | | August. | | September. | | October. | | November. | | December. | | January. | | February. | | Totals. | |
|--------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Clay and sand..... | 13,967 | 41,314 | 39,464 | 13,978 | 45,706 | 29,200 | 29,200 | 29,200 | 29,200 | 29,200 | 29,200 | 29,200 | 29,200 | 29,200 | 29,200 | 29,200 | 29,200 | 29,200 | 29,200 | 29,200 | 29,200 | 29,200 | 29,200 | 29,200 |
| Rock..... | 13,967 | 41,314 | 2,806 | 1,260 | 5,385 | 5,129 | 5,129 | 5,129 | 5,129 | 5,129 | 5,129 | 5,129 | 5,129 | 5,129 | 5,129 | 5,129 | 5,129 | 5,129 | 5,129 | 5,129 | 5,129 | 5,129 | 5,129 | 5,129 |
| Totals..... | 13,967 | 41,314 | 42,270 | 15,238 | 51,041 | 27,329 | 33,584 | 25,229 | 7,741 | 7,741 | 7,741 | 7,741 | 7,741 | 7,741 | 7,741 | 7,741 | 7,741 | 7,741 | 7,741 | 7,741 | 7,741 | 7,741 | 7,741 | 7,741 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

PORT ARTHUR.—(See dredge 'Dominion,' Great Lakes Dredging Co.)
MISSION AND KAMINITIQUIA RIVERS.—See dredge 'No. 5,' Great Lakes Dredging Co.

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| — | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|
| Clay and sand..... | Cub. yds. | Cub. yds. | Cub. yds. 25,135 | Cub. yds. 9,910 | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. 36,045 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RIVER ST. FRANCIS.—Two cuts 1,000 feet long each, and one 300 feet long, 25 feet wide and 6 feet deep at low water were made. These cuts were for the purpose making an approach to the new wharf.

RIVER YAMASKA.—Work was next performed, deepening the channel close to Ile St. Jean to 6 feet at low water.

RIVER DU LOUP (Louisville).—Work performed consisted in making one cut opposite Voisard's property in the main channel, 1,065 feet long, 26 feet wide and 6 feet deep at low water.

1 GEORGE V., A. 1911

ANNUAL REPORT from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'PRINCE WILLIE' OWNER, W. J. POUPORE CO.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|---|---------------|------------------|---------------------------------|----------------------|------------------|----------------------|
| | From | To | | | | |
| River Yamaska, Yamaska Co..... | June 3..... | June 30..... | 4 feet. | 23,341 | \$ cts. 4,280 63 | Cts. .181 |
| River St. Francis, Wolfe Co..... | July 1..... | July 2..... | 6 " | 1,112 | ..... | ..... |
| Yamachiche, St. Maurice Co.... | " 5..... | " 29..... | 6 " | 29,106 | 4,357 89 | .141 |
| Riviere du Loup (en bas), Témiscouata Co..... | August 7..... | September 2..... | 10 " | 16,298 | 7,429 80 | .456 |

Total expenditures, \$16,063.32. Total cubic yards removed, 69,857.

DETAILS OF EXPENDITURE

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|--------------------|---------|---------|----------|----------|----------|------------|----------|-----------|-----------|------------------------------|-----------|
| — | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages..... | ..... | ..... | 79 25 | 84 25 | 95 70 | ..... | ..... | ..... | ..... | ..... | 259 20 |
| Contingencies..... | ..... | ..... | 4,201 38 | 4,273 64 | 6,902 10 | 432 00 | 432 00 | ..... | ..... | ..... | 15,869 12 |
| Totals..... | ..... | ..... | 4,280 63 | 4,357 89 | 6,997 80 | 432 00 | 432 00 | ..... | ..... | ..... | 16,063 32 |

SESSIONAL PAPER No. 19

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|-------------------------|--------------------|--------------------|---------------------|---------------------|---------------------|------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|
| Clay, sand and mud..... | Cub. yds. | Cub. yds. | Cub. yds. 23,341 | Cub. yds. 30,218 | Cub. yds. 15,338 | Cub. yds. 960 | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. 69,857 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

RIVER YAMARCA.—Work consisted in cutting through a shoal at the entrance to the lock. Three cuts were made 500 feet long each, 60 feet wide and 4 feet deep at low water.

RIVER St. FRANCIS. Work consisted of making a cut through a shoal at Mackerel point to a depth of 6 feet at low water.

YAMACHECHE.—One cut was made, 3,143 feet long, 55 feet wide and 6 feet deep at low water, starting from entrance of this river leading to the main channel in Lake St. Peter.

RIVIÈRE DU LOUP (EN BAS).—Deepening around and in front of the wharf.

1 GEORGE V., A. 1911

ANNUAL REPORT from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'ST. LAWRENCE,' OWNER, HANLEY CO.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|------------|------------|---------------------------------|----------------------|----------------------|----------------------|
| | From | To | | | | |
| Point Edward, Lambton Co. | June 3. | August 11. | 16 feet—22 feet. | 82,234 | \$ cts. 14,398 62 | Cts. .18 1/2 |
| Wallacburg, Kent Co. | August 16. | October 7. | 19 feet. | 29,952 | 4,898 16 | .29 1/2 |

Total expenditures, \$19,896.78. Total cubic yards removed, 103,186.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|--------------------|---------|---------|----------|----------|----------|------------|----------|-----------|-----------|------------------------------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages..... | | | 78 00 | 81 00 | 71 54 | 24 00 | 21 16 | | | | 275 70 |
| Contingencies..... | | | 6,002 61 | 7,108 92 | 4,950 12 | 97 06 | 1,462 34 | | | | 19,621 08 |
| Totals..... | | | 6,080 64 | 7,189 92 | 5,021 66 | 121 06 | 1,483 50 | | | | 19,896 78 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|------------------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Gravel, clay and sand. | | | 33,348 | 39,494 | 23,564 | 422 | 6,356 | | | | | | 103,186 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

POINT EDWARD.—Work consisted in the dredging to a depth of 22 feet below low water on different locations opposite the docks and along the frontage of 3,700 feet. The completion of this work left a minimum depth of 21 feet at low water.

WALLACBURG.—A turning basin was made about 240 feet long, 130 feet wide to a depth of 19 feet below L. W. L., also the removing of a slip 70 feet wide and 19 feet deep at low water.

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.
DREDGE ST. PIERRE. OWNER, ANTOINE ST. PIERRE.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|-------|-------------|---------------------------------|----------------------|--------------|----------------------|
| | From | To | | | | |
| St. Maurice River, Champlain Co. | May 6 | November 13 | 8 feet | 215,950 | \$ 22,087 00 | Cts. 10½ |

Total cubic yards removed, 215,950.

Total expenditure, \$22,087.

DETAILS OF EXPENDITURE.

| | April | | May | | June | | July | | August | | September | | October | | November | | December | | January, February and March. | | Totals. | |
|---------------|----------|------|----------|------|----------|------|----------|------|----------|------|-----------|------|----------|------|----------|------|----------|------|------------------------------|------|-----------|------|
| | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. | \$ | cts. |
| Wages | 66 00 | | 78 00 | | 81 00 | | 78 00 | | 78 00 | | 78 00 | | 78 00 | | 33 00 | | | | | | 492 00 | |
| Contingencies | 2,232 00 | | 3,301 50 | | 4,141 00 | | 3,743 50 | | 3,214 50 | | 3,528 50 | | 3,528 50 | | 1,404 00 | | | | | | 21,505 00 | |
| Totals | 2,298 00 | | 3,379 50 | | 4,222 00 | | 3,821 50 | | 3,322 50 | | 3,606 50 | | 3,606 50 | | 1,437 00 | | | | | | 22,087 00 | |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April | | May | | June | | July | | August | | September | | October | | November | | December | | January | | February | | March | | Totals. | |
|---------------|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|-----------|--|
| | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | | Cub. yds. | |
| Clay and sand | 22,320 | | 33,015 | | 41,410 | | 37,435 | | 32,445 | | 35,285 | | 14,040 | | | | | | | | | | | | 215,950 | |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

ST. MAURICE RIVER.—Work consisted in making four cuts, 500 feet long each, and four cuts, 1,000 feet long each, in the main channel at the foot of Baptiste island and alongside the wharf. Two cuts were also made at the head of this island in the main channel, 1,000 feet long each. One cut, 1,000 feet long, in front of Grant's saw-mill. One cut, 1,000 feet long, in front of the mill. All cuts were made to a width of 32 feet, and a depth of from 8 to 10 feet at low water.

1 GEORGE V., A. 1911

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.
DREDGE 'SYDENHAM' OWNER, THE CANADIAN DREDGING AND CONSTRUCTION CO.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|--------|--------------|---------------------------------|----------------------|--------------|----------------------|
| | From | To | | | | |
| Victoria Harbour, Simcoe Co. | May 5. | December 11. | 22 feet. | 455,746 | \$ 64,318 77 | Cts. 14 1/2 |

Total cubic yards removed, 455,746.

Total expenditure, \$64,318.77.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|---------------------|----------|-----------|-----------|----------|----------|------------|----------|-----------|-----------|------------------------------|-----------|
| Wages. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Produce and Towage. | 73 52 | 80 98 | 83 96 | 80 38 | 80 96 | 80 96 | 80 92 | 80 88 | 31 32 | 592 92 | 592 92 |
| Contingencies. | 32 00 | 10,572 62 | 7,458 12 | 6,239 59 | 8,380 25 | 8,265 62 | 7,064 37 | 7,462 12 | 63,693 85 | 32 00 | 63,693 85 |
| Totals. | 8,281 25 | 8,386 77 | 10,653 60 | 7,542 08 | 6,319 88 | 8,461 21 | 8,346 54 | 7,115 25 | 7,493 42 | 64,318 77 | 64,318 77 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|----------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Clay and sand. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Rock. | 66,250 | 84,581 | 59,465 | 49,916 | 64,792 | 63,875 | 49,543 | 13,959 | 2,541 | 16,590 | 452,681 | 3,165 | 455,746 |
| Totals. | 66,250 | 84,581 | 59,465 | 49,916 | 64,792 | 63,875 | 49,543 | 13,959 | 2,541 | 16,590 | 452,681 | 3,165 | 455,746 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

VICTORIA HARBOUR.—See dredge 'Excelsior.'

SESSIONAL PAPER No. 19

ANNUAL Report from April 1, 1909, to March 31, 1910—Continued.
DREDGE "TRENTON," OWNER, R. WEDDELL & CO.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|--|--------|--------------|---------------------------------|----------------------|--------------|----------------------|
| | From | To | | | | |
| Telegraph and Nigger island, Hastings Co | June 9 | September 24 | 15 feet. | 5,798 | \$ 17,678 80 | \$ 3 04 9 |

Total expenditure, \$17,678.80. Total cubic yards removed, 5,798.

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|---------------|----------|----------|----------|----------|----------|------------|----------|-----------|-----------|------------------------------|-----------|
| Wages | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Contingencies | 80 24 | 80 24 | 80 24 | 80 24 | 80 24 | 44 08 | 4,104 00 | | | | 284 80 |
| | 4,713 00 | 4,713 00 | 5,673 00 | 5,673 00 | 2,901 00 | 4,104 00 | | | | | 17,394 00 |
| Totals | | 4,793 24 | 5,753 24 | 5,753 24 | 2,984 24 | 4,148 08 | | | | | 17,678 80 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | Totals. |
|------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Rock | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| | | 1,571 | 1,891 | 1,692 | 1,244 | | | | | | | 5,798 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

TELEGRAPH AND NIGGER ISLAND.—Work consisted in the construction of a cut 1,100 feet long, 100 feet wide and 15 feet deep below zero. Of this work the entire area has been drilled, and one cut 28 feet in width has been dredged the entire length, and a second cut for about two-thirds of the length.

ANNUAL Report from April 1, 1909, to March 31, 1910—*Concluded.*
DREDGE 'WINGFIELD,' OWNER, C. S. BOONE DREDGING CO.

| Localities where Dredging was Performed. | DATE. | | Depth of Water made below Zero. | Cubic Yards Removed. | Expenditure. | Cost per Cubic Yard. |
|---|--------------|--------------|---------------------------------|----------------------|----------------------|----------------------|
| | From | To | | | | |
| Wingfield basin, Bruce Co. | June 8 | July 8 | 18 feet | 4,904 | \$ cts. 14,814 15 | \$ cts. 3.02-08 |
| Total expenditure, \$14,814.15. Total cubic yards removed, 4,904. | | | | | | |

DETAILS OF EXPENDITURE.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January, February and March. | Totals. |
|---------------------|---------|---------|----------|----------|---------|------------|----------|-----------|-----------|------------------------------|-----------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| Wages ..... | ..... | ..... | 71 50 | 30 65 | ..... | ..... | ..... | ..... | ..... | ..... | 102 15 |
| Contingencies ..... | ..... | ..... | 9,723 00 | 4,989 00 | ..... | ..... | ..... | ..... | ..... | ..... | 14,712 00 |
| Totals. .... | ..... | ..... | 9,794 50 | 5,019 65 | ..... | ..... | ..... | ..... | ..... | ..... | 14,814 15 |

QUANTITIES AND DESCRIPTION OF MATERIAL DREDGED.

| | April. | May. | June. | July. | August. | September. | October. | November. | December. | January. | February. | March. | Totals. |
|------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. | Cub. yds. |
| Rock ..... | ..... | ..... | 3,241 | 1,653 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | 4,904 |

NATURE OF DREDGING PERFORMED AT THE DIFFERENT LOCALITIES.

WINGFIELD BASIN.—Work performed consisted in removing portions of rock that were drilled and blasted the previous year along the centre of the channel to give a uniform width of 100 feet when completed, and a depth of 18 feet below ordinary water level.

PROVINCE OF MANITOBA.

BROKENHEAD.

The Brokenhead river empties into Lake Winnipeg at the south end of the lake, some 6 miles east of the mouth of the Red river.

In the territory contiguous to the river, cordwood and railway ties are cut during the winter, and are shipped during the navigation period.

Owing to the small depth of water over the bar at the mouth of the river, considerable difficulty has been experienced in getting these products out.

As there is no natural protection of any kind from the heavy seas that roll in at this point, it has always been felt that any improvement consisting of the mere dredging of a channel without protection would not be of a lasting character.

The amount of shipping would not appear to warrant any heavy expenditure for protection. Owing to an urgent demand for the dredging of a channel to get out some cordwood and ties, it was thought advisable to undertake sufficient dredging to permit of vessels of small draught entering the river.

An investigation was made of the conditions in the early part of July, and the survey showed the bar to extend a distance of 2,800 feet into the lake. The depth of water at the outer end was $6\frac{1}{2}$ feet at the existing stage of water, representing $2\frac{1}{2}$ feet at lowest water. The average depth over the bar was 3.8 feet.

The tug *Victoria* and pile driver scow left Selkirk on June 28, and the interval between that date and July 6 was spent in driving the necessary anchor piles for operating dredge *Assiniboine*, which arrived from Grand Marais on July 5. Actual dredging was started on July 6.

Some delay occurred during the first week of dredging, due to the fact that the dredge and equipment was forced to tow to the mouth of the Red river for shelter at night, a distance of 6 miles.

By September 4, a channel 2,800 lineal feet in length, 50 feet wide, with a navigable depth of $6\frac{1}{2}$ feet at the existing stage of water, was established. 19,738 cubic yards of sand and clay were removed, the material being discharged through the pontoon pipe line to the lee side of the channel.

During the above time the following delays occurred:—

| | Days. |
|------------------------------------|-------|
| Wind. | 12 |
| Repairs. | 4 |
| Driving piles and coaling. | 4 |

The total expenditure on this work is \$3,013.33, making a cost of $15\frac{1}{4}$ cents per cubic yard for excavation.

ICELANDIC RIVER.

The dredging of the channel leading from the mouth of Icelandic river, Selkirk county, to deep water in Lake Winnipeg, was resumed during the latter part of the season.

It was found that some filling in of the channel had taken place at the outer end. The dredging this season was done by dredge *Assiniboine*.

From September 6 to October 22, some 15,180 cubic yards of clay were removed in dredging a channel 3,550 lineal feet, 75 feet wide and giving a navigable depth of 7 feet at average stage of water, and $4\frac{1}{2}$ feet at low water.

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Of the above distance dredged, some 700 lineal feet was east of any dredging done last season.

The delays were:—12 days from heavy winds, 2 days minor repairs, 4 days driving mooring piles.

The total cost of this work has been \$2,678.52, making a cost of 17.6 cents per cubic yard for excavation.

On the completion of the season's work on October 22, the dredge *Assiniboine* and equipment was towed to winter quarters at Selkirk.

LAKE DAUPHIN.

Lowering lake by removing obstructions from bed of Mossy river.

The object of this work is to increase the discharge capacity of the Mossy river with the idea of lowering the permanent level of Lake Dauphin. It is anticipated that this will, by increasing the storage capacity of the lake, prevent floods on the low land surrounding the lake.

Incidentally, some benefit may accrue to a shallow draught navigation which may develop on the river.

A channel 910 feet in length, 40 feet wide and with a 5-foot depth below low water, was dredged from the mouth of the river to deep water in the lake.

In the river proper, the total distance dredged in various places amounts, in all, to 4,550 lineal feet, with a width of 40 feet and depth below lowest water of 4 feet.

Various places have been dredged, covering a length of river amounting to 3½ miles. In the lower part of the above distance the river was swept for a distance of 1,900 lineal feet, and all boulders removed.

All material excavated has been cast over, generally to the bank of the river, the location of all dredging having been made, as much as possible, with this end in view.

A delay of 10 days occurred in passing through two small, fixed, highway bridges, necessitated by the removal and replacing of a small crib pier, in each case, to allow the dredge to pass through.

The dredging for the season was completed on November 12 and the laying up of dredge for winter was completed on November 17.

The total amount of excavation, consisting of sand, clay and gravel, was 21,572 cubic yards, in addition to which, as stated above, boulders were removed, in a distance of 1,900 lineal feet, at the lower end.

The total cost of the work has been \$3,346.76.

The cost per cubic yard of excavation removed cannot be estimated owing to the work spent in sweeping the channel over a distance of 1,900 lineal feet, no record of quantity removed in this distance being obtainable. Ignoring this latter work altogether and assuming 21,572 cubic yards as the total excavation, the cost per cubic yard appears to be 15.5 cents.

RED RIVER.

This comprises the work of dredging below the St. Andrews lock, Selkirk county, the purpose of which is to afford a channel in the river, 200 feet in width and a least navigable depth of 9 feet at lowest water.

The greater part of this dredging is immediately below the lock, and was taken over from the contract awarded to Messrs. Quinlan and Robertson.

Dredge *Winnipeg* was employed in this work during the period between May 25 and July 30, when some 24,000 cubic yards of earth, gravel and boulders were removed in the lower entrance, overlaying the rock. The material excavated was scowed away to deep water. An amount of rock, averaging 2 feet in depth will have to be removed and it is the intention to have this done during the coming season by the new dredge *Winnipeg*. It is expected that this dredge will have no difficulty in removing this rock without preliminary blasting.

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Owing to the restricted seaway and shallow water, it was found impossible to use the tug *Sir Hector* as tender for the dredge, the small tug used formerly at Winnipegosis being brought here for this purpose.

On the completion of the dredging in the lower entrance, the dredge was sent to a point 1 mile below the lock, where the river bed was cleared of boulders overlaying the rock, for a distance of $\frac{1}{2}$ mile. This work was accomplished during the period from July 30 to October 12. This work was practically scraping and very little material was removed, the time taken up in moving being considerable. This has increased the unit cost of dredging greatly.

The total amount of material removed by dredge *Winnipeg* during the season has been 27,165 cubic yards at an expenditure of \$8,223.80, making a cost per cubic yard of 30.2 cents.

In addition to the time lost in sweeping the channel of boulders, the dredge's efficiency for work is very small, owing to its condition, and some care had to be exerted to make her last throughout the season.

SIGLUNES.

Siglunes, Dauphin county, is situated on the east side of Lake Manitoba, south of the Narrows. A sawmill industry is located here and it is the post for a considerable Icelandic settlement.

Representations have been made for the last two years of the necessity for dredging at this point to permit of the entrance of steamers and light craft.

On the completion of the work at Oak Point, on September 8, the first favourable opportunity of towing up to Siglunes was taken, which, owing to bad weather, was not until the 20th of the month. It was also found necessary, on the way up to Siglunes, to tow into shelter at Rabbit Point and Siglunes was not reached until September 24, when a severe storm of three days' duration almost wrecked the dredge. Actual dredging commenced on September 27, and the work was finally completed on October 23, when the dredge and equipment towed to the Landing, White Mud river, and was eventually laid up in winter quarters on October 30.

At Siglunes, the work consisted of the dredging of a channel for a depth of 7 feet at low water, in the lake, to the Mathews Company's sawmill dock, a distance of 700 lineal feet. The width of channel formed was 40 feet.

A basin along the dock and inner slough was also constructed, having a length of 370 feet, width 60 feet and least depth of 7 feet.

The amount of material removed consisted of:—

| | Cubic yards. |
|-------------------------|--------------|
| Outer channel.. | 3,436 |
| Inner basin.. | 5,048 |
| Total.. | 8,484 |

The material consisted mostly of clay with a stratum of hardpan, about 1 foot in depth in the basin.

The total cost of this work has been \$1,547.62, making a cost per cubic yard of 13.2 cents.

SWAN CREEK.

Dredge *Manitoba* was in working commission on May 26 and the dredging required for the completion of the Swan Creek work was resumed on that date.

Some difficulty was experienced with frost in the face of the cut left by dredge last fall.

On June 3, the work at Swan Creek was completed, a channel having been dredged to within 120 feet of the bridge at the colonization road. It was not considered ad-

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visible to approach any closer to the bridge than the above distance to avoid any likelihood of the undermining of that structure from erosion caused by the original fall in water level between the bridge and Lake Manitoba, about $2\frac{1}{2}$ feet now being concentrated at the end of dredged cut.

There is now a dredged channel of at least 6 feet in depth at lowest water and 35 feet in width, from Lake Manitoba to within 120 feet of the colonization road, at section 6, township 20, range 5 W.

The total distance by the existing water courses from Lake Manitoba to the colonization road is $4\frac{1}{2}$ miles, of which distance the latter 9,800 feet was almost continuous dredging.

During the present season, from May 26 to June 3, a channel 400 lineal feet in length was dredged, giving a channel 35 feet in width, with 6 feet minimum depth.

The amount of material removed, consisting of muskeg, clay and hardpan, was 3,307 cubic yards, the material being cast to each side.

A request for some dredging for an entrance channel into a hunting lodge, near the mouth of Swan creek, having been granted, the dredge *Manitoba* was placed at work on the completion of the dredging mentioned above.

This dredging took from June 7 to June 11, during which time a channel 760 feet in length, 35 feet wide, and depth of 4 feet was constructed, some 3,885 cubic yards of muskeg and soft clay having been cast to each side of the cut.

The cost of this work made up as follows:—

Rental of plant, 5 days at \$25, \$125; fuel, 10 cords wood at \$3.25, \$32.50; total, \$157.50; was charged to the parties for whom this work was done, and the amount credited to the dredging appropriation.

A survey was made of the entrance into Swan creek from the lake, and ranges were established by which the entrance can be safely navigated.

The total cost of dredging at Swan creek, omitting the work done for private parties mentioned above, has been \$330; the cost per cubic yard of excavation was 10 cents.

WHITE MUD RIVER.

Dredge *Manitoba* and equipment left Gypsumville on July 10, arriving at the mouth of the White Mud river, Macdonald county, on the 12th and preparations were made to do dredging necessary to increase the depth of water over the bar at the mouth of the river.

The average stage of water in Lake Manitoba was considerably lower this season than for some years previous, and the boats of the Manitoba Gypsum Company were experiencing considerable difficulty in making an entrance into the river at periods of southerly winds. At such times, the water in the south end of the lake is lowered considerably. It may be stated that the bar formed is mostly alluvial deposit carried there by the river, and any improvement made by dredging is not of a permanent nature.

An investigation made in July last, prior to undertaking any dredging, showed the outer end of the bar to extend 4,545 feet from the mouth of the river. At this distance, the depth was 8 feet at lowest water. The minimum depth observed on the bar was 6.5 feet.

It was considered advisable to have the dredge *Manitoba* do only sufficient work to afford immediate relief by giving a navigable depth at lowest water of 7 feet, with the idea of continuing the work later on and thereby enable the dredge to do work contemplated at Oak Point and Siglunes.

During the period from July 12 to August 13, some 4,718 cubic yards of clay and sand were removed, giving a navigable depth of at least 7 feet at lowest water. Considerable delay occurred from heavy winds.

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On August 13 and 14, dredge *Manitoba* removed some 990 cubic yards of sand and clay in giving a greater depth of water at the Manitoba Gypsum Company's loading dock at Totogan on the White Mud river.

The total expenditure on the above work has been \$1,105, making a cost per cubic yard of 19.4 cents.

DREDGE VESSEL REPAIRS.

The customary annual dredge vessel repairs were made during the season. The expenditure to put dredge *Winnipeg* in such shape that she would last throughout the season was considerable.

On dredge *Assiniboine*, the greater portion of the expenditure was on account of new agitator, pump runner, and rubber discharge sleeves.

The expenditure on dredge *Manitoba* practically covers the repairs for two years, owing to the late opening of navigation in 1909 and early opening in 1910 bringing both outlays for repairs in the same fiscal year. The dredge has been hauled out, planked over and caulked.

The summary of dredge vessel repairs is as follows:—

| | Labour. | Materials. |
|------------------------------------|------------|------------|
| Dredge <i>Assiniboine</i> | \$ 119 00 | \$1,018 20 |
| Dredge <i>Winnipeg</i> | 1,060 88 | 572 37 |
| Dredge <i>Manitoba</i> | 636 35 | 312 10 |
| Dredge <i>Crane</i> | 20 00 | |
| Tug <i>Victoria</i> | 56 00 | 82 08 |
| | <hr/> | <hr/> |
| | \$1,892 23 | \$1,984 75 |

Total expenditure to March 31, 1910, is \$3,876.98.

NEW DREDGING PLANT—GENERALLY.

The expenditure for the fiscal year ended March 31, 1910, has consisted of:—

New dredge 'Winnipeg.'—The construction of this dredge was gone on with during the year, although considerable delay occurred in the shipment of machinery from Ottawa. It is expected that this dredge will be in commission by the end of June.

| | |
|-------------------|------------|
| Labour.. . . . | \$2,967 93 |
| Materials.. . . . | 5,906 39 |
| | <hr/> |
| | \$8,874 32 |

Dredge 'Assiniboine.'—Two new Scotch type boilers were installed during the month of April. The expenditure on this account was:—

| | |
|------------------------------|------------|
| Labour, installing.. . . . | \$ 215 87 |
| Boilers and fittings.. . . . | 4,719 20 |
| | <hr/> |
| | \$4,935 07 |

New Dump Scows.—The construction of two new 60-yard, centre, dump scows, was completed during the month of May. These scows were commenced during the previous year and are for service with dredge *Winnipeg*:

| | |
|-------------------------------|------------|
| Labour.. . . . | \$1,557 95 |
| Material and supplies.. . . . | 1,118 39 |
| | <hr/> |
| | \$2,676 34 |

New Dump Scow.—A new 60-yard dump scow was started during the month of February. This scow is to be used with dredge *Winnipegosis*, now being fitted up for

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the dredging required at the mouth of the Mossy river. It is expected that this scow will be completed by the end of May. The expenditure to the end of the fiscal year, on account of this scow has been: materials, \$606.89.

New Dump Scow, Lake Manitoba.—The construction of a new 60-yard dump scow for use with dredge *Manitoba* was undertaken in the month of January. This scow will be completed in time for the opening of navigation:—

| | |
|-------------------|------------|
| Labour.. . . . | \$ 311 00 |
| Materials.. . . . | 1,992 71 |
| | <hr/> |
| | \$2,303 71 |

The summary of expenditures on new dredging plant, chargeable to the appropriation of 'New Dredging Plant—Generally' has been:—

| | |
|---|-------------|
| Dredge <i>Winnipeg</i> | \$8,874 32 |
| Dredge <i>Assiniboine</i> | 4,935 07 |
| New Dump Scows (Selkirk).. . . .* | 2,676 34 |
| New Dump Scow (Lake Winnipegosis).. . . . | 606 89 |
| New Dump Scow (Lake Manitoba).. . . . | 2,303 71 |
| | <hr/> |
| Total.. . . . | \$19,396 33 |

Tug 'Victoria.'—Repairs, alterations and new equipment:—

| | |
|------------------|-----------|
| Labour.. . . . | \$ 190 75 |
| Supplies.. . . . | 615 08 |
| | <hr/> |
| | \$ 805 83 |

Tug 'Lisgar.'—Construction of a new tug, 50 feet long and 13 feet beam, to serve as tender for new dredge *Winnipeg* for river and shallow draught work. The engines taken out of tug *Victoria* some years ago have been installed in this boat, the greatest item of expenditure being the purchase of a new boiler:—

| | |
|------------------|------------|
| Labour.. . . . | \$ 715 60 |
| Supplies.. . . . | 1,610 76 |
| | <hr/> |
| | \$2,326 36 |

Coal Storage Pockets.—A coal storage pocket of a capacity of 160 tons has been constructed at Selkirk, which, it is expected, will greatly economize on the handling of coal for our vessels:—

| | |
|--------------------------------|------------|
| Labour.. . . . | \$ 546 25 |
| Material and equipment.. . . . | 1,067 72 |
| | <hr/> |
| | \$1,613 97 |

A gantry for the purpose of raising tugs and scows for minor repairs has been constructed at the Selkirk shipyard. In the past, considerable expenditure has been incurred in hauling out our tugs for repairs to propellers on the marine slip controlled by private parties:—

| | |
|-------------------|-----------|
| Labour.. . . . | \$ 269 50 |
| Materials.. . . . | 252 40 |
| | <hr/> |
| | \$ 521 90 |

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New Office.—A new office and storeroom for the general foreman was erected at the Selkirk shipyard:—

| | |
|--------------------------------|-----------|
| Labour. | \$ 168 50 |
| Material and supplies. | 440 42 |
| | <hr/> |
| | \$ 608 92 |

PROVINCE OF BRITISH COLUMBIA.

FRASER RIVER.

The dredge *King Edward* was employed at various places on the Fraser river from April 1 to November 29, 1909, as follows:—

From April 1 to June 12, the dredge worked at Annieville bar pumping material on each side of the groynes; the dredging was not done in the channel as it was too far from the place where the material was wanted. These groynes have had the desired effect of deepening the channel to 22 feet at low water which is 8 feet deeper than it was before the work was started on these groynes.

The total amount of material dredged was 188,650 cubic yards.

From June 12 to July 23, the dredge underwent repairs.

On June 27, the dredge was nearly ready to commence dredging and was lying at the government wharf at Sapperton, but about 9 o'clock in the morning a boom of logs broke adrift up the river and came down on the dredge and sunk a scow which was lying just ahead of the dredge with the suction pipe resting on it. There was a strong current, the river being in flood, and the logs piled up on the scow and carried away the suction pipe, boom and a frame, making a complete wreck of the headgear, and it was not until July 23 that the repairs were completed.

From July 23 to 26, the dredge deepened the channel in front of the Oilery, removing 3,950 cubic yards of material.

On July 27, dredged in front of the Dease Island cannery wharf, removing 5,600 cubic yards.

From July 28 to October 6, the dredge worked at Ladner, cutting a channel 2,000 feet long, averaging 175 feet wide, 10 feet deep at low water, from the main channel up to the wharf. The total quantity of material removed was 161,200 cubic yards.

From October 7 to October 26, the dredge was employed cutting a channel into Burr's landing from deep water in the main river, when some necessary repairs had to be made; these were completed on October 31, when the dredge returned to Burr's landing and worked there until November 9. This cut is about 1,000 feet long, 150 feet wide and 10 feet deep at low water. The quantity of material removed was 50,400 cubic yards.

From November 9 to November 30, the dredge underwent repairs and the plant was put in order to go to Nanaimo.

The total expenditure for dredging on the Fraser river during the fiscal year ended March 31, 1910, is \$23,478.24.

SAND HEADS.

The dredge *Fruhling* was purchased in Germany for the special purpose of deepening the channel through the sand heads of the Fraser river and has been kept at work there since April 1, 1909, with the exception of two days' work at the Annieville

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bar, May 3 and 4, and nine days at Chemainus from August 17 to 25, where she was employed in deepening the water in front of the saw mill.

From April 1 to 9, the dredge worked, deepening the channel between No. 2 red buoy and No. 5 black buoy.

From April 10, the dredge was tied up by the owners until May 2, when it was formally taken over by the department.

On May 3 and 4, the dredge worked at Annieville bar, removing 8,800 cubic yards of material from the channel.

From May 4 to June 21, the dredge worked at the sand heads between No. 2 red and No. 5 black buoys.

From June 22 to August 16, was under repairs, new liners, &c., put in pumps, &c.

On August 16, dredging was again started at the sand heads, but as it was the fishing season, it was found almost impossible to work so as not to interfere with the nets, and on the 17th the dredge was sent to Chemainus to work in front of the saw mill wharfs; quantity of material removed was 13,200 cubic yards of sand and gravel.

On August 25, the dredge returned to the sand heads and worked until November 25.

From November 26 to December 19, was placed under repairs.

On December 20, returned to sand heads and worked between No. 2 red and No. 5 black buoys until January 27, when some small repairs were made; these were completed on February 7 when dredging was resumed and continued without delay until March 31.

The total quantity of material removed during the year was 801,180 cubic yards.

The total cost of operating the dredge *Fruhling* for the year ended March 31, 1910, exclusive of cost of repairs, was \$30,360.05.

NEW DREDGING PLANT.

The only expenditure under this head was in connection with the dredge *Fruhling* in payment of wages, supplies, &c., during her trial and pending her acceptance by the department. The expenditure amounted to \$1,873.17.

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STATEMENT of Work done by Dredges in British Columbia in 1909-10, showing quantity of material dredged, cost per cubic yard, cost of repairs to dredges, tugs and scows, and number of days occupied in dredging, repairing, &c.

| Name of Dredge. | Cost of Operating. \$ cts. | Cost of Repairing. \$ cts. | Total Cost. \$ cts. | Quantity of Ma- terial Dredged. Cub. yds. | Cost per Yard. Cts. | Number of Days Dredging. | Number of Days Repairing. | Holidays and Delays. | Total Days. | Quantity of Ma- terial Dredged per Working Day. |
|-----------------------|----------------------------------|----------------------------------|------------------------|---|------------------------|-----------------------------|------------------------------|-------------------------|-------------|--|
| King Edward | 34,028 24 | 2,297 03 | 36,325 27 | 625,670 | 5.7 | 188 | 70 | 107 | 365 | 3,398 |
| Fruhling | 30,360 05 | 3,634 11 | 33,994 16 | 801,180 | 4.2 | 160 | 76 | 129 | 365 | 5,007 |
| Ajax | 28,294 99 | 10,613 43 | 38,908 42 | 163,700 | 23.7 | 191 | 72 | 102 | 365 | 857 |
| Mud Lark | 26,964 64 | 13,181 04 | 34,145 68 | 127,600 | 26.8 | 195 | 84 | 86 | 365 | 651 |

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DREDGE 'PELICAN.'

The *Pelican* was put in commission on March 29, and was engaged until June 9 in cutting a channel through the lower bar on Little river, then moved to the head of the South Thompson, where she was occupied in dredging until the end of the month; then moved to Salmon Arm where the approach to the wharf was deepened.

On September 1, she was moved to Tappan hatchery to do some dredging for the Marine and Fisheries Department and was employed there until March 5, 1910, cutting a channel about 3 feet deep at low water from deep water towards the hatchery, 1,250 feet long and about 60 feet wide.

The quantity of material removed in doing the above work was about 48,000 cubic yards, and consisted pretty much of heavy clay.

The expenditure for the fiscal year ended March 31, 1910, was \$9,281.32.

DREDGING PLANT UNDER THE CONTROL OF THE DEPARTMENT OF
PUBLIC WORKS, 1909.

MARITIME PROVINCES.

'St. Lawrence' self-propelling elevator dredge.

Length over all, 170.0 feet; beam, 30.0 feet; least working depth, 8.5 feet; greatest working depth, 28.0 feet.

Capacity of hopper, 350 cubic yards.

Daily dredging in hard material, 350 to 700 cubic yards.

" " ordinary earth, 750 to 1,000 cubic yards.

" " soft earth, 1,050 to 1,400 cubic yards.

'Canada' self-propelling elevator dredge.

Length over all, 130.0 feet; beam, 20.0 feet; least working depth, 7.0 feet; greatest working depth, 16.0 feet.

Capacity of hopper, 90 cubic yards.

Daily dredging in hard bottom, 180 to 270 cubic yards.

" " ordinary material, 180 to 360 cubic yards.

" " soft material, 360 to 450 cubic yards.

'Prince Edward' spoon dredge.

Length, 80 feet; width, 28 feet; greatest working depth, 21 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " ordinary material, 500 cubic yards.

" " soft material, 700 cubic yards.

Number of accompanying dump scows or barges, 3.

Capacity of bucket or spoon, $1\frac{1}{2}$ cubic yards.

'Geo. McKenzie' spoon or dipper dredge (wooden hull).

Length, 90 feet; width, 28 feet; greatest working depth, 22 feet.

Daily rate of dredging in hard material, 350 cubic yards.

" " ordinary material, 500 cubic yards.

" " soft material, 600 cubic yards.

Number of dump scows or barges used, 3.

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'Cape Breton' boom and dipper dredge (steel hull).

Length, 91 feet; beam, 36 feet; greatest depth, 34 feet.

Daily rate of dredging in hard material, 1,000 cubic yards.

" " ordinary bottom, 1,500 cubic yards.

" " soft bottom, 2,000 cubic yards.

The clam shell dredge 'New Brunswick' (wooden hull).

Length over all, 90 feet; width, 25 feet; greatest working depth, 17 feet.

Daily rate of dredging in hard material, 180 cubic yards.

" " ordinary material, 300 cubic yards.

" " soft material, 650 cubic yards.

The 'W. S. Fielding' combined elevator and hydraulic hopper dredge.

Length, 250 feet; beam, 42 feet; depth, 18 feet; working depth, 60 feet.

Capacity of hoppers, 1,000 cubic yards.

Daily output of buckets, 2,600 yards.

The spoon dredge 'Montague' (steel hull).

Length over all, 90 feet; width, 37 feet 8 inches; draught, 5 feet 6 inches; greatest working depth, 28 feet.

Daily rate of dredging, 10 hours, 1,000 cubic yards.

Number of barges used (each 72 feet long 19 feet 8 inches wide, depth 7 feet), 2.

The sand pump dredge 'Northumberland' (steel hull). •

Length, 130 feet; agitator, 65 feet; width, 52 feet; draught, 7 feet; working depth, 40 feet.

Daily working capacity, 4,000 cubic yards in ten hours.

'Nereus' dredge (steel hull).

Length, 159½ feet; breadth, 28 feet; depth, 10.2 feet; draught loaded, 13 to 14 feet; empty, 9 feet aft and 4 feet forward.

Hopper capacity, 513 cubic yards. Triple expansion engines and electrical equipment.

Tug 'Helena.'

Length, 111 feet; beam, 23 feet; hold, 13 feet; horse-power, 87.

Tug 'Hercules.'

Length, 73 feet; breadth, 20 feet; hold, 8 feet 2 inches; net tonnage, 24; gross tonnage, 87; horse-power, 50 (Sc.).

Tug 'Cricket.'

Length, 36.5 feet; beam, 7.3 feet; draught, 3.10 feet; horse-power, 4.

Tug 'Rona.'

Length, 85.0 feet; beam, 19.3 feet; draught, 8.0 feet; horse-power, 25.

One pile driver, with boiler and engine mounted on scow.

One stone lifter with large grips (no boiler).

There are two (2) steel hopper barges of 200 cubic yards capacity under contract for the dredges in the maritime provinces.

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QUEBEC AND ONTARIO.

'Queen' dipper dredge.

Length, 65.3 feet; beam, 25 feet.

Greatest working depth, 17.0 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " ordinary material, 400 cubic yards.

" " soft material, 600 cubic yards.

(Dredge attended by tug *Sensation* and two dump scows of 30 cubic yards capacity.)

'Nipissing' dipper dredge.

Length, 70.7 feet; beam, 25.0 feet; greatest working depth, 20.0 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " soft material, 800 cubic yards.

" " ordinary material, 500 cubic yards.

Capacity of bucket, 3 cubic yards.

(Attended by tug *Delisle*, 2 dump scows and 1 coal tender.)

'Ontario' dipper dredge.

Length, 75.0 feet; beam, 25.0 feet; greatest working depth, 22.0 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " ordinary material, 500 cubic yards.

" " soft material, 800 cubic yards.

(Attended by tug *Sir John* and 2 dump scows.)

'Challenge' dipper dredge.

Length, 70.5 feet; beam, 25.0 feet; greatest working depth, 21.10 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " ordinary material, 500 cubic yards.

" " soft material, 800 cubic yards.

(Attended by tug *Trudeau* and 2 dump scows.)

'St. Louis' spoon dredge.

Length, 50.0 feet; beam, 14.0 feet; greatest working depth, 12.0 feet.

Daily rate of dredging in hard material, 50 cubic yards.

" " soft material, 300 cubic yards.

(Attended by tug *Daisy* and 2 dump scows.) Used only in light work.

Twin stone lifter (catamaran.)

Length of each wooden hull, 42.0 feet; beam of each wooden hull, 8.5 feet; distance between hulls, 7.0 feet.

'Reserve' wooden scow.

Length, 59.0 feet; beam, 17.0 feet; capacity, 100 tons.

'Sir Richard' dredge.

Length, 80.0 feet; beam, 28.0 feet; greatest working depth, 22.0 feet.

Daily rate of dredging in hard material, 300 cubic yards.

" " ordinary material, 500 cubic yards.

" " soft material, 800 cubic yards.

Capacity of bucket, 3 cubic yards.

(Dredge attended by tug *St. Paul*.)

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Dredge 'Industry.'

Length, 125 feet; beam, 43 feet; greatest working depth, 35 feet.

Daily rate of dredging in soft material, 3,000 cubic yards.

" " ordinary material, 2,000 cubic yards.

" " hard material, 1,500 cubic yards.

Dredge 'Quebec.'

Length, 108 feet; beam, 36.8 feet; greatest working depth, 40 feet.

Daily rate of dredging in soft material, 4,000 cubic yards.

" " ordinary material, 2,700 cubic yards.

" " hard material, 1,800 cubic yards.

Dredge 'No. 3.'

Length, 60 feet 10 inches; beam, 22 feet 10 inches; greatest working depth, 14 feet.

Daily rate of dredging, ordinary material, 400 cubic yards.

Capacity of bucket, 1 cubic yard.

'Richelieu' dredge.

Length, 70.0 feet; beam, 22.0 feet.

Daily rate of dredging in ordinary material, 400 cubic yards.

(Attended by tug *Ottawa* and 2 dump scows.)

'Steam stone lifter' centre well.

Length, 25.0 feet; beam, 23.0 feet; depth, 4.0 feet.

(Attended by 130-foot scow as coal tender.)

'St. Maurice' dredge.

(A small dredge used on the River St. Maurice only.)

Tug *Annette* and stone lifter.

'Lake St. John' dredge.

Length over all, 75 feet; width, 25 feet; draft, $2\frac{1}{2}$ feet; greatest working depth, 18 feet.

Tug *Marie-Louise* on Lake St. John.

'International' dipper dredge.

Length, 109.6 feet; beam, 41.0 feet; greatest working depth, 60.0 feet.

Daily dredging in hard material, 1,000 cubic yards.

" " ordinary material, 1,500 cubic yards.

" " soft material, 2,000 cubic yards.

'Progress' dredge.

Length, 90.10 feet; beam, 39.2 feet; greatest working depth, 30.0 feet.

Daily rate of dredging in hard material, 500 cubic yards.

" " ordinary material, 1,000 cubic yards.

" " soft material, 1,500 cubic yards.

(Dredge attended by tug *Monitor* and 3 scows.)

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'Mattawa' dipper dredge.

Length, 75.0 feet; beam, 25.0 feet; greatest working depth, 25.0 feet.
 Daily rate of dredging in ordinary material, 1,000 cubic yards.
 (Dredge attended by tug *Catherine* and 2 dump scows.)

'Deschenes' dredge.

Length over all, 50 feet; beam, 20 feet; draught, 2 feet 6 inches.
 Capacity of bucket $1\frac{1}{2}$ cubic yards. Least working depth, 6 feet, greatest, 16 feet.

'No. 5' dredge.

Length over all, 77 feet 4 inches; beam, 24 feet; draught, 9 feet.
 Capacity of bucket, 3 cubic yards. Least working depth, 10 feet; greatest, $24\frac{1}{2}$ feet.

'Dredge No. 1' on River St. Louis Feeder.

Length, 55.0 feet; beam, 20.0 feet; greatest working depth, 12.0 feet.
 Daily rate of dredging, 300 to 400 yards.

Dredge 'No. 2' dipper dredge.

Length, 60.0 feet; beam, 22.0 feet; greatest working depth, 14.0 feet.
 Daily rate of dredging, ordinary material, 400 cubic yards.

Dredge 'No. 6' dipper dredge.

Length, 97 feet; beam, 36.4 feet; greatest working depth, 35 feet.
 Daily rate of dredging, ordinary material, 1,500 cubic yards.
 (Tugs *Speedy*, *Montmorency*, *Blanche*. Schooner *Rutherford*.)

MANITOBA.

'Winnipeg' dipper dredge.

Length, 71.0 feet; beam, 25.0 feet; greatest working depth, 20.0 feet.
 Daily rate of dredging in hard material, 300 cubic yards.
 " " ordinary material, 500 cubic yards.
 " " soft material, 800 cubic yards.

'Manitoba' dipper dredge.

Length, 60 feet; beam, 24 feet.
 (Dredge attended by tug *Victoria* and two dump scows.)

'Priestman' barge and clam-shell dredge.

A small dredge, old and not much good.

'Crane' orange peel dredge.

A scow fitted up as a dredge.

'Assiniboine' dredge.

Length, 50 feet; width, 30 feet, and depth 4.5 feet.
 Orange peel bucket, $1\frac{1}{2}$ yard capacity.

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Tug 'Lisgar.'

Length, 50 feet; beam, 13 feet.

SASKATCHEWAN.

'Last Mountain Lake' dredge (dipper dredge).

Length, 66 feet; beam, 24 feet 8 inches; greatest working depth, 18 feet.

Daily output, ordinary material, 400 cubic yards.

Capacity of dipper, $\frac{3}{4}$ cubic yard.

BRITISH COLUMBIA.

'King Edward' propelling hydraulic dredge.

Length, 125 feet; beam, 32 feet; greatest working depth, 40 feet.

'Mud Lark' dipper dredge.

Length, 90 feet; beam, 30 feet; greatest working depth, 40 feet.

Daily rate of dredging in hard material, 300 to 400 cubic yards.

" " ordinary material, 500 to 600 cubic yards.

" " soft material, 800 cubic yards.

(Dredge attended by tug *Princess* and three dump scows.)

'Nakusp' self-propelling dipper dredge.

Length, 80 feet; beam, 25 feet; boom, 50 feet; dipper capacity, $\frac{3}{4}$ foot.

'Fruhling' hydraulic hopper and suction dredge (steel hull).

Length, 187.0 feet; breadth, 34.6 feet; moulded depth, 14.9 feet; draft, loaded, 13.1 feet; dredging depth, 45.0 feet.

Capacity of hoppers, 785 cubic yards.

Load capacity, 1,000 tons.

Indicated horse-power, 1,000.

Speed, loaded, 9 knots.

Speed, light, 12 knots.

Rate of dredging, 1,500 cubic yards per hour.

Dredge 'Ajax.'

Length, 110 feet; beam, 38 feet; least working depth, 14 feet; greatest working depth, 40 feet.

Daily output from 800 to 1,400 cubic yards, according to nature of material.

Dredge 'Pelican.'

Length, 58 feet; beam, 24 feet; draws about 1 foot 6 inches water.

Orange peel bucket; will work in any depth of water.

Daily output, about 200 cubic yards.

Snag boat 'Cygnets.'

Length, 100 feet; beam, 27 feet; draws about 3 feet 2 inches water.

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Snag scow on Naas River.

Length, 60 feet; beam, 20 feet 6 inches; depth, 4 feet 6 inches; draws about 2 feet of water.

Tug-boat 'Muskrat II.'

Length, 80 feet; beam, 20 feet.

'Samson' snag boat.

Length, 115 feet; beam, 30 feet.

'Petrel' and tender.

Length, 85 feet; beam, 17 feet; horse-power, 280.

DRY DOCKS.

The Dominion government owns and operates three dry docks, viz.: the Lorne dry dock, at Lévis, province of Quebec; the Kingston dry dock, at Kingston, province of Ontario; and the Esquimalt dry dock, at Esquimalt, near the city of Victoria, in British Columbia.

LEVIS DRY DOCK.

During the past fiscal year, the dock was maintained in an efficient manner. There were 26 vessels docked during the year; the revenue amounted to \$18,951.43, and the expenditure to \$14,846.61.

KINGSTON.

During the year ended March 31, 1910, the dock was kept in good condition, the usual repairs and improvements only having been made.

| | |
|--|--------|
| Number of vessels docked.. . . . | 59 |
| Total tonnage.. . . . | 37,295 |
| Number of days dock was occupied.. . . . | 240 |

The dues collected amounted to \$14,488.84, and the expenditure on staff, fuel, light, labour and supplies for repairs was \$6,604.03.

ESQUIMALT.

The dock was occupied 96 days during the year; 20 ships were docked for cleaning, painting and repairs, and the total revenue collected was \$12,572.36.

The above shows a much smaller revenue than that for the two previous years and is largely due to the fact that a dock has been established at Seattle, which offers a special rate to ships that require cleaning and painting only, so that during the past year, very little business of that class has been secured for Esquimalt.

Besides docking and undocking ships, the staff has been employed stripping the shingles from the roofs of engine room and lavatories and replacing the same with corrugated iron roofing; clearing out caisson recess, repairing, scraping and painting outside of caisson, chipping and painting lower chamber of caisson and top gate; completing the grading of circular head so that extra space has been gained for piling shored planking. &c.; renewing the sills under the office, stable and hose reel houses.

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The plant is now, and is at all times, kept clean and in readiness to undertake any business that may offer.

The amount expended during the year ended March 31, 1910, was \$14,996.82.

RIVIÈRE DU LIÈVRE LOCK.

This lock is situated at Poupore, on the Rivière du Lièvre, 12 miles above Buckingham, in the county of Labelle. It is built to overcome the Little Rapids at that place and to drown the Long Rapids above, thus giving slack water navigation as far as High Falls, a total distance of 24 miles from Buckingham.

Repairs and improvements to the lock and dam here during the season included:—Sheeting of upper end of slide piers with 6-inch tamarack; altering and replacing wrought iron corner plates of said piers; restoring eroded back-fill of lock wall; purchasing crab winch for movable boom and repairing old winch; constructing new boom pier; extending dock pier an extra 30 feet upstream. This was done intermittently by day labour at a cost of \$1,744.13.

Expenditure for fiscal year ended March 31, 1910, is \$2,841.81.

YAMASKA LOCK.

In 1886, a lock and dam was constructed at Ile Cardin, on the Yamaska river, 1½ miles below the village of St. Michel d'Yamaska. The lock gives a lift of 5½ feet.

During the low water season, the main dam was repaired, also the eastern pier of the lock, by renewing the covering and sheathing and placing some stone rip-rap.

The expenditure for the fiscal year ended March 31, 1910, may be summarized as follows:—

| | |
|-----------------------------------|------------|
| For staff and maintenance.. . . . | \$1,720 53 |
| For repairs.. . . . | 768 40 |
| | <hr/> |
| | \$2,488 93 |

SLIDES AND BOOMS.

The Dominion government owns and operates slides and boom works, built to facilitate the passage of square timber, round logs, flatted and dimension timber, &c., on the River Ottawa and tributaries; on the St. Maurice river; the Saguenay river, and at Fenelon Falls and Burleigh Falls on the Trent river.

In the subjoined reports, the superintending engineers of the river works, Messrs. G. P. Brophy, F. X. Lefebvre, and J. C. Taché, give particulars relative to the construction, improvements and repairs carried out under their supervision on government slides, booms, piers, dams, streams, buildings, &c., during the fiscal year; the expenditure incurred for staff, maintenance, improvements, &c.; the quantities of the various descriptions of timber that pass through their works, and other information of general interest and utility to lumbermen and the public at large.

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REPORT ON THE OTTAWA RIVER WORKS.

(By G. P. Brophy, Superintending Engineer.)

The Chief Engineer,
Department of Public Works,
Ottawa.

OTTAWA, April 30, 1910.

SIR,—In compliance with the request contained in your circular letter of March 2 last, I have the honour to submit herewith the following report on the works under my charge, for the fiscal year ended March 31, 1910.

ORDINARY REPAIRS—STATIONS ON OTTAWA RIVER—MAIN STREAM.

North Chaudière Station.—At the upper slide, the gains for the stop-logs, where the timbers were gouged out, were filled with oak plank; the bottom of slide and pier on north side at outlet were repaired, and an iron-sheathed stop-log was made for the bulk-head.

The outlet of the lower slide was laid with timber 30 feet in length, to which were fastened iron straps to prevent abrasion. The upper portion of the pier dam at lower basin, which was damaged by the spring freshet, was rebuilt. This dam is 85 feet in length, 10 feet in width, and the part rebuilt is 4 feet in height.

The front and top are covered with hemlock plank, 3 inches in thickness, and a footway was built at the rear of the dam supported by uprights set in the body of the pier in order to give access to the bulk-heads of waste gate and slides. The stringers of waste gate were repaired, and additional stone was placed at the approaches to the bulk-head over western regulating sluiceway.

South Chaudière Station.—At this station, the buildings were kept in an efficient state of repair; the boom fastenings were repaired, and during the winter, ice was cut from around the booms and aprons to protect them from damage as the water in the channels rose and fell.

Cheneaux Station.—The only expenditure here was for paint, oil, and turpentine for the usual repairs to the boats.

Joachim Station.—The outlay at this station was quite trivial, and was for expenses in connection with the inspection of the slides, booms and piers.

TRIBUTARIES OF OTTAWA RIVER.

Gatineau River.—The floor of the bridge over the old canal was covered with 3-inch hemlock plank. This bridge is 78 feet long, and the material was laid on top of the old floor, the width so covered being 14 feet. The guard railing was also renewed in many places, and braces were placed to stiffen the posts where the latter were defective. The top of the 'trip pier,' just below the Canadian Pacific Railway Company's bridge, was raised three courses. The pier is 35 feet long and 20 feet wide, the new portion being filled with stone ballast. Stone was deposited around the foundations of the pier at upper end of main boom, to prevent the bottom from being scoured. During the spring months, the usual precautions were taken to protect the booms when the ice was moving off the river. The plank covering of the booms was patched, and new pickets and screw bolts were provided to give increased rigidity. The fences,

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storehouses and station-house were kept in good order, and the boats and scows were repaired and painted.

Madawaska River.—At Arnprior station; the bulk-head and support piers of the slide were repaired. The pier on east side is 12 feet in width, and was built for a height of $8\frac{1}{2}$ feet from the water's edge, and that on west, also 12 feet in width, for a height of 4 feet. Two cords of stone were placed in these piers. Four stringers of 10 by 10-inch timber were put into the bulk-head, and the planking on top, 37 feet by 13 feet, was renewed. A guard railing was built at both ends and in front of the bulk-head platform, the supports for the crab-frame were repaired and four stop-logs of 10 by 13-inch timber were made for the slide.

At Flat Rapids station, a break in the dam on south side of the river was repaired. Three stringers, three ties and 18 cubic yards of stone were placed in the body of the dam, and 528 superficial feet were covered with 6-inch plank.

At High Falls station, the main guide boom was broken during the spring of 1909. When the water fell sufficiently, temporary repairs were made to this boom, also to the piers which support it and to the main governing dam. Later on, the boom was hauled out of the water, taken apart and rebuilt. The boom is a stiff one, four sticks wide at bottom and two at top, the timbers being 14 inches square. The joints are well broken and the timbers are fastened both ways at intervals of 10 feet with $1\frac{1}{2}$ -inch screw bolts, the top being sheeted with 2-inch pine plank. The length of the section of boom so treated was 100 feet.

The bottom of the slide, immediately below the stop-log checks, was laid with 6-inch red pine plank, and ten stop-logs were made for the upper bulk-head.

At Chain Rapids station, worn out ends of boom sticks were sawn off, the holes were bored further up in sound timber for the chains which connect the different members of the boom, and several of the chains were renewed.

Coulonge River.—At High Falls station, the foundations of the flat dam, across channel adjacent to slide entrance, having become undermined by the action of the water in springtime, the damage had to be made good. A cofferdam was built to close out the water, the missing timbers were replaced, and about seven cords of stone were placed in the substructure. In order to give easy access to the slide, a platform 2 feet in width was built along this dam. The face of the main governing dam was covered with 10-inch timbers, 16 feet in length, for a width of 13 feet. The glance pier on north side at entrance to slide was rebuilt and filled with stone. The platform of the bulk-head was repaired; the uprights for the apparatus used in hoisting the stop-logs were renewed, and the steps leading to slide and also those leading to guide boom were both rebuilt. The top timbers of two of the piers supporting the guide boom were repaired, these having been displaced by spring freshets. The slide was thoroughly overhauled from end to end. Ten posts of 10 by 10-inch timber, varying in length from 16 feet to 25 feet, with ends resting on seats cut in the solid rock, were set to support the superstructure. At eight different stations the slide was blocked up to grade, 39 cross sills and 99 posts with braces were replaced, and in many places the sheeting in sides and bottom was patched. At other sections, stretches were covered with entirely new material. Four hundred lineal feet of foot-boards were renewed where the old walk was decayed. At places where the slide is of a great height, it is advisable to provide increased security to guard against bodily displacement of the slide structure owing to constant oscillation which is present when operations are in progress, so two additional stay chains were provided for this purpose. One end of the chain is attached to a ring bolt sunk in the rock and the other end to an eye bolt which is secured to the longitudinal timbers of slide.

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Black River.—At High Falls station, a section of the slide just below the entrance piers was taken down and built in the new. The structure at this point passes over a deep gulch or ravine, and was formerly carried upon timber bents, three tiers in height. Some years ago, stone was thrown around the foundations filling the space to the level of the top of the second bent, which greatly improved matters, but as the vibration was always great, the upper portion having gradually shifted to such an extent that the slide had become far too much out of alignment, and serious damage was likely to result if the prevailing conditions were allowed to exist. A pier of crib-work was built, resting partly upon the top of second tier of bents, and partly upon the stone 'fill,' which provided a foundation for the bents to support the superstructure. This pier is 88 feet long, 16 feet wide at base, 13 feet at top, and from 6 feet to 8 feet high. It is filled with stone, and an opening was left in its base to provide proper drainage for waste water issuing from head works. The bents, standing on the pier, are eleven in number, range from 5 feet to 10 feet in height, and sustain the weight of the slide. The superstructure, consisting of longitudinal stringers, cross-sills, posts, braces and sheeting, was also built of new materials. At another place, about 150 feet from bulk-head, 10 posts and the necessary sheeting were placed. Near the outlet of slide, iron bars in the sides and bottom were taken off and re-set, the sides at bends were braced, and worn-out timbers were reinforced with maple plank. Several lengths in different parts of the guide boom leading to slide, which were water-logged, were replaced. Two stay piers, each 6 feet by 8 feet and 4 feet high, were built on the shore, and new braces were placed to keep the boom in its proper position.

Petewawa River.—In the spring of 1909, the works on this tributary suffered very severely. At the lower stations, the slides and piers were considerably wrecked and dislodged.

At Crooked Chute, the central part of the main governing dam was broken away, and the guide booms at entrance to slide were carried over the chute. The works at the other stations suffered damage to a much lesser extent.

At First Chute station, the head piers of slide having been sprung out of place had to be re-set. Two plates of iron, each 4 feet by 8 feet, were placed on the corners of the piers at entrance to slide. Five pieces of timber and new sheeting were also placed on the governing dam to the north of slide.

At Second Chute station, a portion of the main governing dam, 62 feet in length, was built and sheeted with 6-inch pine plank 12 feet long. The timbers of the pier on north side at outlet of slide were renewed, and missing stone filling was supplied.

At Third Chute station, two piers which support the sorting boom were replaced. They are situated a short distance above the entrance to channel for logs and timber; one is 15 feet by 16 feet and 9 feet high, being on the shore while the other is 17 feet square and 17 feet high, standing in 8 feet of water. A portion of the long glance pier on north side, above Canadian Pacific railway bridge, was repaired. The part built new is 40 feet in length, 12 feet in width and 9 feet in height. The sheeting on other piers at this station was also patched where defects had occurred.

At Crooked Chute station, a section of the main dam, 50 feet long, was reconstructed from its foundations, and the remaining parts were patched and strengthened. The guide boom at entrance of slide was also overhauled. This is 500 feet in length, of which 350 feet were built in the new. The old parts were repaired by splicing and the addition of screw bolts and cross fenders. The piers for the guide boom were rebuilt from the water's edge. They are each 17 feet square and 8½ feet high above water. Mooring posts were placed in these piers and they are also well protected by timber fenders.

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The retaining boom, about 2 miles above slide, was strengthened by placing cross fenders on top of timbers and inserting extra chains around ends of double lengths. A pier at lower end of this boom was built from low water mark. It is 18 feet square and 6½ feet above the water line.

At McDonald's station, the support pier for guide boom on north side was rebuilt from water level. The pier is 18 feet square, and the portion rebuilt is 8 feet in height. Two mooring posts and three fenders were placed on this pier and the boom was snubbed with ¾-inch chains. The double boom extending from above pier to slide entrance was placed in a good state of repair by removing old timbers and substituting new ones, for a distance of 150 feet. New cap pieces were placed on the boom and new timbers were fastened with 1½-inch screw bolts. The single portion of boom from pier to shore, 209 feet in length, was also repaired and the ½-inch chains were replaced by ¾-inch, as the former proved too light.

On the south side, a mooring post was placed in the first pier. The main governing dam was patched and stoue, brush and gravel were deposited along the front to stop leakage as much as possible.

At Cedar Lake station, two piers for guide boom on south side were rebuilt. The upper one is 18 feet square and the lower one 14 feet square, both being 7 feet above the water level. Four fenders and two mooring posts were put on the former, and one mooring post and two fenders on the latter. The guide boom, on both sides, at entrance to sluiceway, was strengthened by placing cap pieces well spiked to the timbers. The pier dam on north side was extended some 84 feet to shore, being 8 feet in width and 3 feet in height. The front is close-work, and brush and gravel were placed along upper side to make it water-tight. The flat dam to south of gate, 32 feet in length, was covered with red pine sheeting.

At the Blind Chenail, some 2 miles below outlet of Cedar lake, the pier dam was repaired. This is 197 feet long, 10 feet wide at bottom and 9 feet at top, and an average height of 7 feet. The front is built of close work, and brush and gravel were placed at its foundations for the purpose of retaining the water.

Dumoine River.—Three piers in connection with the guide boom at entrance to High Falls slide were built over. The upper one is located on the shore, and is 14½ feet square and 10 feet high. The intermediate one is 15½ feet square and was built from the water's edge, a height of 8 feet. The lower one, at east of feed gap, is 14 feet square, and was also built from water's edge, a distance of 7 feet in height. Six fenders of 6 by 9 inch were placed on three piers closer to slide entrance, to provide a suitable sliding surface from the booms. Two rollers were made for the bulk-head of the slide and waste gate, the former being 21 feet in length and the latter 14½ feet. Six lengths of guide boom were made and connected together by ¾-inch chains; the upper end of the boom being held by a rock bolt of 1½-inch iron set on the west bank of the river.

In the spring of 1909, the water in the Ottawa river and its tributaries was unusually high, higher than in any year since 1876, and in consequence, many of the works suffered considerable damage on account of the severe strain to which they were subjected. The water reached its maximum height about May 29, then fell steadily until the end of July, when, owing to the heavy rains, it rose much above normal and maintained a pitch above the average throughout the fall months.

The following statement, furnished by the Collector of Revenue of Public Works, shows the volume of business for the fiscal year:—

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STATEMENT of the number of saw-logs, timber, &c., that passed through the government works (slides and booms) on the Ottawa river and its tributaries, during the fiscal year ended March 31, 1910:—

| | Pieces. |
|-------------------------------------|-----------|
| Saw logs.. | 4,507,687 |
| Square timber.. | 104 |
| Boom and dimension timber.. | 39,803 |
| Cedars.. | 76,508 |
| Railroad ties.. | 538,148 |
| Fence posts.. | 74,323 |
| | <hr/> |
| | 5,236,572 |

Also 75,124 cords of pulpwood.

The revenue accrued on the above was \$41,645.85.

In submitting the foregoing report, I have the honour to be, sir,

Your obedient servant,

GEO. P. BROPHY,

Superintending Engineer Ottawa River Works.

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STATEMENT showing Expenditure for Repairs to Ottawa River Works, for Fiscal Year ended March 31, 1910.

| Name of Work. | Province. | Electoral District. | Expenditure Apr. 1 to Nov. 30, 1909. | | Expenditure Dec. 1, 1909, to Mar. 31, 1910. | | Expenditure Apr. 1, 1909, to Mar. 31, 1910. | |
|-------------------------|-----------|---|--|----------|---|----------|---|-----------|
| | | | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| North Chandlere Station | Quebec. | District of Wright | 200 75 | 1,250 46 | 1,460 21 | | | |
| South " " | Ontario. | City of Ottawa. | 93 50 | 89 05 | 182 55 | | | |
| Cheneaux Station. | " | South Riding County of Renfrew. | 6 00 | | 6 00 | | | |
| Joachim " " | Quebec. | County of Pontiac. | 14 85 | 315 10 | 1,318 51 | 14 85 | 1,063 61 | |
| Gatineau River. | Quebec. | District of Wright. | 211 25 | 301 69 | 512 94 | | | |
| Madawaska " | Ontario. | South Riding County of Renfrew. | 39 42 | 852 95 | 882 37 | | | |
| Conlonge " " | Quebec. | County of Pontiac. | 499 39 | 1,059 97 | 1,559 36 | | | |
| Black " " | " | " | 136 15 | | 1,502 95 | 1,639 10 | | |
| Petewawa " " | Ontario. | North Riding County of Renfrew and County of Nipissing | 2,536 30 | 3,429 34 | 5,965 64 | | | |
| Dumoine " " | Quebec. | County of Pontiac. | 633 07 | 4,055 58 | 7,146 90 | 633 07 | 11,202 48 | |
| | | | | | | | | 12,806 00 |

April 30, 1910.

JOS. KENT, Accountant.

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REPORT ON ST. MAURICE RIVER WORKS.

(By F. X. Lefebvre, Superintending Engineer.)

TROIS RIVIÈRES, April 25, 1910.

EUGÈNE D. LAFLEUR, Esq.,

Chief Engineer, Department of Public Works,
Ottawa.

SIR,—In answer to your circular of March 2, 1910, I have the honour to submit the following report on the works executed under my supervision in the St. Maurice river during the fiscal year ended March 31, 1910.

LA TUQUE.

We did not quite complete the works on the wharf, as we had to stop on account of the rise of the water level which occurred so suddenly last fall in the St. Maurice river that it prevented us driving the bolts in the lower parts of the sheathing pieces of this wharf. A few days work next summer will be sufficient to complete same.

IMPROVEMENT TO THE CHANNEL BETWEEN GRANDES PILES AND LA TUQUE.

Last summer, the water level in the St. Maurice river was high during the full season and the largest boats that ply between Grandes Piles and La Tuque were able to navigate until the end of the season. Our dredge and our stone-lifter were in operation during the proper time and were very effective. We painted the beacons after repairing those partly destroyed by the wind or the snow. We placed the floating wharfs and the buoys in their proper places in the spring and put them in their winter quarters during the fall.

GRANDES PILES AND PETITES PILES.

From May 8 to 18, 1909, there was a water level rise of about 9 feet 6 inches when there were 800,000 logs at Grandes Piles; 400,000 on the side of La Pointe à Madeleine and 400,000 on the St. Jacques side. The booms at the Pointe à Madeleine resisted, but those on the St. Jacques side were broken by the pressure that was enormous at the spot, and the 400,000 logs that were in those booms, with the exception of 75,000 that we succeeded to retain at Petites Piles, were driven down the St. Maurice river to Pointe à Bernard at Shawinigan Falls, carrying down with them part of the Ste. Flore booms and part of those of Petites Piles over Grand Mère Falls.

To again close the retention booms at St. Jacques, at Ste. Flore and at Petites Piles, we were obliged to construct a spruce boom 100 feet long by 5 feet 10 inches wide, and five British Columbia fir booms, varying from 96 feet to 100 feet in length by 6 feet 6 inches to 6 feet 8 inches in width and another British Columbia fir boom of 60 feet long by 5 feet 10 inches wide.

Besides the above-mentioned large booms, we built for Grand Piles, 900 feet of booms 3 feet wide; 175 feet of 2 feet in width; one boom 99 feet long by 6 feet wide; one 99 feet long by 5 feet wide and one 60 feet long by 5 feet wide; all the above built of spruce timber.

We also built for Ste. Flore, 1,463 feet in length of spruce booms 3 feet in width and one 50 feet long by 6 feet 8 inches wide, made from British Columbia fir, taken out of booms which were broken in going over the Grand Mère Falls during spring of 1909. We rebuilt, at Grandes Piles, from low water line to the height of about 21 feet from the Pointe à Madeleine gauge, three piers that were very much deteriorated

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and too low; we also built the foundations of a new pier to replace the No. 3 of St. Jacques des Piles, which was worthless.

SHAWINIGAN UPPER BAY.

Last fall, we built the concrete foundations of the dam at the head of the Shawinigan Falls log slide and heightened nine piers at Pointe à Bernard to the level of 200 feet by the Shawinigan Water and Power Company's water gauge and built the foundations of a new pier.

SHAWINIGAN LOWER BAY.

Last spring, the water had so badly undermined the northeast side of our property at the lower Shawinigan bay, that, to prevent the destruction of our stable there, we were obliged to build a dry wall of 49 feet long by 14 feet high on one side and 45 feet long by an average height of $11\frac{1}{2}$ on the other side. We built 449 feet of single pine booms to lengthen the booms guiding the logs into the middle channel of the Grés Falls, for which coupling chains were supplied, besides 400 feet of $\frac{3}{4}$ -inch guy chains and 600 feet of $\frac{1}{2}$ -inch guy chains.

The swift current, created by the high level of the river last spring, upset the pier situated below the Pigeon Island and it will necessitate the building of a new one there this year.

TROIS-RIVIÈRES.

We repaired three of the piers which form part of the set used for the main boom near the Canadian Pacific railway bridge.

We have done all the usual works in regard to the maintenance of the booms, and placed them all in position last spring, after having done the necessary repairs, opened or closed them in accordance to the demand of the lumber firms, and were placed last fall in winter quarters.

I have the honour to be, sir,

Your obedient servant,

F. X. LEFEBVRE,

District Engineer.

SAGUENAY RIVER BOOMS.

(By J. C. Taché, Superintending Engineer.)

E. D. LAFLEUR, Esq.,

Chief Engineer.

SIR,—Saguenay booms are on the Saguenay river, about 6 miles above Chicoutimi.

For details of construction and general repairs see Public Works report 1908, page 333, from the year 1904-5 to the year 1907-8.

The work done during the year 1908-9, was the repairing of the booms which had been damaged on account of the extraordinary high water.

1,251 feet of booms were constructed in spruce; anchors and chains were bought. Amount expended, \$8,373.34.

The work done during the fiscal year 1909-10 was general repairs to booms, scows, row boats, and an extension to the boom master's house at Rivière aux Vases was erected; a mooring post was established on the north shore as the starting point on shore of the Saguenay booms.

I have the honour to be, sir,

Your obedient servant,

J. C. TACHE.

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TRENT AND NEWCASTLE DISTRICT.

BURLEIGH FALLS.

Burleigh Falls, West Peterborough, is on the route of the Trent Valley canal. At this place there is a slide with training piers, &c., from which the department derives a revenue.

These slide works were maintained during the year at a cost of \$100.

FENELON FALLS.

Fenelon Falls, Victoria county, is on the route of the Trent Valley canal. At this point there are slide works which are a source of revenue to the department.

These slide works were maintained during the year at a cost of \$100.

BRIDGES AND ROADS.

It may be stated that, in the older provinces of the Dominion, the federal government has confined itself, as a rule, to take under its exclusive control and make provisions towards the construction and maintenance of important interprovincial road bridges and bridges required across waterways.

In the sparsely settled districts of the Northwest Territories, the government of Canada has undertaken to provide for the erection and maintenance of ordinary road bridges over large streams; bridges that are urgently needed to afford uninterrupted communication through trails and highways of national importance, which neither the municipalities to be more immediately benefited by the structures nor the territorial authorities most directly concerned, could be expected to erect and maintain at their sole expense.

During the last fiscal year, works have been executed on the following:—

ONTARIO AND QUEBEC.

BRIDGES AT OTTAWA, AND ROADWAY AND BRIDGE APPROACHES BETWEEN OTTAWA AND HULL.

—ORDINARY REPAIRS.

Laurier Bridge.—The sidewalks at both ends of the approaches to this bridge, having become sagged owing to the settlement of the soft clay foundations were temporarily repaired until the permanent repairs are undertaken. Broken pieces of concrete were removed and the spaces were filled with pine plank, 2 inches in thickness.

Sappers' Bridge.—The sidewalk on the south side of this bridge was covered with 2-inch hemlock plank, the cross bunks being also renewed where decayed.

Chaudiere Slide Bridge.—The roadway of Chaudiere bridge over south Chaudiere slide and hydraulic channels was cleaned often; the gratings and drainage chambers were kept free from obstruction, and the concrete foundation for gratings at south end were repaired.

Union Bridge.—The portion of this bridge between the tracks and the western side was covered with 3-inch hemlock plank. In some places the oak under-floor was renewed where defects were found. The roadway was also cleaned frequently.

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Hull Slide Bridge.—The only expenditure on this bridge was that incurred in keeping the roadway in a proper condition.

Roadway and Bridge Approaches Between Ottawa and Hull.—A new sidewalk was laid along this thoroughfare, from the entrance to Booth's dock northward to the stone dam, a distance of 320 feet. The walk is 7 feet wide of 3-inch pine plank, carried on bunks which rest upon the steelwork. The bunks were soaked in a preservative to lengthen their life as much as possible. A curb of 4 by 8-inch pine was laid along the walk, securely fastened to the iron standards. The pipes of the guard rail were strengthened and painted; the paving blocks were taken up and re-set to grade, and the roadway was cleaned at regular periods through the year.

During the winter months, ice and snow were removed from the sidewalks of the bridges and causeway leading to Hull, and when the walks were in a slippery condition, sand was spread over their surface to ensure the safety of those having occasion to use them.

INTERPROVINCIAL BRIDGE ACROSS OTTAWA RIVER AT RAPIDES-DES-JOACHIMS.

This bridge spans the Ottawa river at Rapides-des-Joachims, and portions of the approaches to the bridge across the main channel were damaged by the high water in the spring of 1909. The most damage was done at the Ontario end of the bridge, where a part of the retaining wall on the east side was torn away, thus allowing the interior filling to fall out. A new wall was built and suitable filling was deposited in the rear to make up the deficiency. A washout also occurred at the northern approach to the same bridge, on the island between the two bridges. This was properly filled in to place the roadway in a suitable condition to accommodate the travelling public. About 418 cubic yards of stone and 138 cubic yards of gravel were used in the execution of this work.

GRAND RIVER BRIDGE.

Grand river bridge is a highway bridge connecting the east and west banks of the Grand river at the village of York, in the county of Haldimand, and 5 miles from Caledonia, the nearest railway station.*

On June 29, 1909, authority was received to expend the sum of \$1,800 by day labour in renewing decking of Grand river bridge and making other necessary repairs.

The work involved, consisted of the complete removal of plankings, floor joists, snow-boards and placing additional knee-braces at end panel points of each truss. There were originally seven 4-inch by 15-inch pine joists, planked with 3-inch pine, in each panel. This system has been replaced by one of five joists, four of which are 4 inches by 15 inches white pine, and the centre joist being a 10-inch 25 pound I-beam, all resting on the original joist supports and bolted to the floor beams. In leaving off the two outer joists the roadway has been reduced from 18 to 16 feet in width, which is sufficiently wide for the traffic. The new planking put on is 3-inch white oak with a crowning of $\frac{1}{2}$ -inch at the centre of the bridge.

A 4-inch by 12-inch white oak guard rail is carried by the base of the knee braces and the original snow-boards are bolted to the braces above the guard rail.

It was found impossible to secure prompt delivery of the steel I-beams required, and in consequence, active operations on this work were not commenced until November 10 and were continued until December 22, when, owing to bad weather and lack of material, work was suspended. It was again resumed on February 21 and completed on March 31, 1910.

In the execution of the above work, some 21,570 feet b.m. of white oak and pine, 12,037 lbs. of iron and 30 gallons of paint were used. The completion of this work leaves the bridge in excellent condition.

Total expenditure during the fiscal year 1909-10 is \$1,823.29.

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MATAPEDIA BRIDGE.

In 1908, the department was requested to build a bridge over the Restigouche river.

The Interecolonial railway thought it advisable to put in a new railway bridge, and both departments agreed on a transfer of the old railway bridge to the Matapedia road, which here connects the counties of Bonaventure, Que., with Restigouche, N.B.

The work of construction commenced in October, 1908, by building the western abutment of concrete, at an angle of 45 degrees with the centre line of the bridge; it is 33 feet wide, 21 feet high and 3 feet thick with a footing of 7 feet wide by 3 feet high, and two wing walls, 12 by 20 feet. Four additions built to the Interecolonial railway piers, 27½ feet long, 9 feet wide and 6-8 high have been constructed to the eastern abutment which is 22 feet wide and 12 feet high.

The re-erection of the iron superstructure was completed in November, 1909; it is an old style column bridge, built by the Phoenix Bridge Company for the Intercolonial railway, and is composed of five spans, 207 feet long, 17½ feet wide and 29½ feet high.

At the end of the fiscal year, 1910, the work was complete with the exception of painting and the building of the approaches.

When completed, this highway bridge will be a great convenience to the inhabitants of the Matapedia valley and to the travelling public.

The expenditure to March 31, 1910, is \$20,003.52; to complete will cost about \$17,000.

CHAPEAU BRIDGE.

The village of Chapeau, on Allumette Island, Pontiac county, is connected with the mainland by an approach built in the sixties across the Culbute channel of the Ottawa river.

This bridge was built and repaired from time to time through grants from the provincial government, but is now in a very bad state of repair, and treacherous to traffic. Some 2,000 inhabitants in its vicinity, together with much interprovincial traffic, depend on this structure, being the only bridge across the Ottawa river between Bryson and Desjardins, a distance of over 70 miles. Railway connections are made at Pembroke, Ont., and Waltham, Que., each 8 miles distant.

At its session of 1908, parliament granted \$10,000 towards the construction of a new steel and concrete bridge. An examination, survey and report were made, and a site 40 feet upstream from the old structure was studied in detail for the preparation of contract plans and specifications. These having been prepared, the contract was let for the substructure to Messrs. Vincent. L. & John J. Fallon, of Cornwall, for \$14,895 on March 24, 1910.

Meanwhile, the old bridge was repaired to handle the traffic till such time as the new bridge can be put into commission; this was done by day labour, September 1 to 21, 1909, at a cost of \$241.82.

PORTAGE DU FORT BRIDGE.

Portage du Fort is a village on the Quebec shore of the Ottawa river, in the county of Pontiac, 60 miles above the city of Ottawa.

During the spring floods, the filling of the approaches of the north channel bridge across the Ottawa river at this point was leached out. Some 10 yards of stone and 5 yards of gravel were used in repairing the damage, May 29 to June 4, at a cost of \$12.18.

A strip 12 feet wide, 200 feet long, on the north channel bridge, was covered with 3-inch tamarack laid diagonally. Riprap approach wall and hand-rail were repaired; approach roadways were repaired and graded on both shores. This work was carried out intermittently, August 18-October 1, at a cost of \$446.37.

Expenditure for fiscal year ended March 31, 1910, is \$458.55.

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EXPENDITURE on BRIDGES for Fiscal Year ended March 31, 1910.

| Name of Work. | Province. | Electoral District. | Expenditure April 1, 1909 to November 30, 1909. | | Expenditure December 1, 1909 to March 31, 1910. | | Expenditure April 30, 1909 to March 31, 1910. | |
|---|-------------|--|--|----------|--|----------|--|----------|
| | | | \$ | cts. | \$ | cts. | \$ | cts. |
| Ordinary Repairs :— | | | | | | | | |
| Bridges at Ottawa and Roadway and Bridge approaches between Ottawa and Hull— | | | | | | | | |
| Laurel Bridge..... | Ontario | City of Ottawa. | | | 62 50 | | 62 50 | |
| Sapper's Bridge..... | Ontario | City of Ottawa. | 74 50 | | 125 59 | | 200 09 | |
| Chaudiere Slide Bridge..... | Ontario | City of Ottawa. | 194 50 | | 64 50 | | 259 00 | |
| Union Bridge..... | Ont. & Que. | City of Ottawa and District of Wright. | 238 69 | | 174 42 | | 413 11 | |
| Hull Slide Bridge..... | Quebec. | District of Wright..... | | | 15 25 | | 15 25 | |
| Roadway and Bridge approaches between Ottawa and Hull..... | Ont. & Que. | City of Ottawa and District of Wright. | 647 51 | 1,155 20 | 609 86 | 1,043 12 | 1,248 37 | 2,198 32 |
| Special Repairs :— | | | | | | | | |
| Interprovincial Bridges at Rapids—des- | | | | | | | | |
| Juchins..... | Ont. & Que. | N. Riding Co. Renfrow and Co. Pontiac | | 387 97 | | | | 387 97 |

April 30, 1910.

JOS. KENT, *Accountant.*

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MANITOBA.

BRANDON.

The joint Canadian Pacific Railway Company and City of Brandon highway bridge across the Assiniboine river at the foot of First street, city of Brandon, has been completed according to the plans submitted and rejected 'for not being high enough' over the main channel of the Assiniboine river, but, it appears, with the understanding that a higher bridge, or one with a swing or bascule span would be erected on demand.

Their spans are very short, their piers together with cofferdams are broad at the base, therefore occupying a great deal of the river bed. It would seem proper to encourage companies, provincial governments, &c., to adopt a different mode of construction, that is to say, longer spans and not unnecessarily block the stream to the extent that these bridge piers are doing.

PROVINCE OF SASKATCHEWAN.

BATTLEFORD.

The Battle river bridge at Battleford, situated in the county of Battleford. The population of Battleford is said to be 2,000, and North Battleford 1,500. This bridge has not been disturbed within the last year. Therefore, no repair work has been done.

PRINCE ALBERT.

The Canadian Northern Railway bridge, built over the North Saskatchewan river at Prince Albert, is within the city limits of the town of Prince Albert, in the county of Prince Albert.

It was supposed that the Canadian Northern railway would build a guide pier in a southwesterly direction from the southern rest pier of the swing span, but no work was done within this last period, although the steamboat companies towing rafts of saw-logs through the bridge once in a while suffer great inconvenience, particularly when a northwest wind is prevailing.

SOUTH SASKATCHEWAN.

GRAND TRUNK RAILWAY BRIDGE, SASKATOON.

The Grand Trunk railway bridge, built over the South Saskatchewan river, 2 miles south of Saskatoon, is situated in the county of Saskatoon, in the province of Saskatchewan.

Nothing has been done in the way of improvement to the bridge in order to permit navigation of the river by steamboats at high water, either by means of swing or bascule spans.

CANADIAN NORTHERN RAILWAY BRIDGE, SASKATOON.

The Canadian Northern railway bridge, built over the South Saskatchewan river at Saskatoon, is within the city limits, therefore in the county of Saskatoon.

This bridge forms part of the Regina branch of the Canadian Northern Railway Company, and had formerly a swing, but since it has been rebuilt without one is too low to permit navigation by steamboats at high water.

A quantity of debris, piles and old cribs, left in the channel, have not yet been removed; that should properly be attended to in the interest of navigation.

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PROVINCIAL GOVERNMENT BRIDGE, SASKATOON.

The provincial government of Saskatchewan built a bridge over the South Saskatchewan river within the city limits of Saskatoon, that has a population of (said to be) 10,000, and is in the county of Saskatoon.

This is a solid bridge, without provision for opening same, and too low to allow ordinary steamboats to sail under at high water.

CANADIAN PACIFIC RAILWAY BRIDGE, SASKATOON.

The Canadian Pacific Railway Company built over the South Saskatchewan river about the city limits of the city of Saskatoon a solid bridge without means of opening to allow vessels to sail through and is, without improvements, too low to allow vessels to sail under at high water.

A number of piles were also left in the bed of the river, that should have been removed by the company, and are yet standing as a menace to navigation.

OUTLOOK BRIDGE.

The Canadian Pacific railway have requested the privilege of bridging the South Saskatchewan river (a navigable stream) at Outlook, a prosperous new town. The railway plan did not contemplate the necessary provisions for navigation. Plans have been amended to suit the requirements of navigation, particularly as such a stream as the South Saskatchewan river, at this point, is one that is considered an important navigable waterway.

ALBERTA.

MEDICINE HAT.

Medicine Hat is situated in the county of the same name, and has, it is stated, a population of over 5,000 people.

The provincial government highway bridge, built without provision for opening and too low to allow steamers to pass under at high water, and without submitting plans for approval, has been left intact within the last year, and open to general traffic.

BANFF BRIDGES.

Banff is situated within the Rocky Mountain Canadian National park.

Within the year just ended, the work of repairs to the flooring and repainting of both the Bow and Spray bridges was done, and the sum of \$678.26 was expended.

CEMENT LABORATORY.

OTTAWA, April 4, 1910.

E. D. LAFLEUR, Esq.,

Chief Engineer, Public Works Department.

SIR,—I have the honour to transmit herewith the annual report of the cement laboratory for the year ended March 31, 1910.

During the last twelve months, 1,481 samples were submitted to this branch for test purposes, which number shows an increase of 27 samples over the same period last year.

All samples of cement and other building materials submitted to this laboratory have been fully tested and reported upon.

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Of the 1,481 samples tested, 1,458 were accepted and 23 rejected. Of the 23 condemned, 10 were Rampart slag cement, 9 were Monarch Portland cement, 2 were Sau-guene portland cement, 1 was Artillery portland cement and 1 was White portland cement.

The 1,481 samples received were from the following:—

| | |
|---|-------|
| Engineers of the Public Works Department.. . . . | 1,403 |
| Cement manufacturers.. . . . | 60 |
| Contractors.. . . . | 8 |
| Architects of the Public Works Department.. . . . | 4 |
| Deputy Minister of Public Works.. . . . | 3 |
| Members of parliament.. . . . | 2 |
| Outside engineer.. . . . | 1 |

The 1,481 samples received were of the following brands:—

| | |
|---------------------------------------|-----|
| Star Portland Cement.. . . . | 478 |
| International Portland cement.. . . . | 467 |
| Monarch Portland cement.. . . . | 159 |
| Lehigh Portland cement.. . . . | 112 |
| Samson Portland cement.. . . . | 46 |
| Vulcan Portland cement.. . . . | 39 |
| Artillery Portland cement.. . . . | 30 |
| Sun Portland cement.. . . . | 11 |
| Blue Lake Portland cement.. . . . | 11 |
| Rampart slag cement.. . . . | 11 |
| Sanguene Portland cement.. . . . | 3 |
| White Portland cement.. . . . | 2 |
| Belleville Portland cement.. . . . | 2 |
| Samples of cement unmarked.. . . . | 18 |
| Steel bars.. . . . | 42 |
| Samples of sands.. . . . | 19 |
| Samples of gravel.. . . . | 19 |
| Samples of rock.. . . . | 4 |
| Samples of clay.. . . . | 2 |
| Steel chain.. . . . | 2 |
| Miscellaneous.. . . . | 4 |

The principal works from which the above-named samples were received were:—

St. Andrews rapids lock and dam, Manitoba.
 Quebec harbour improvements, Quebec, Que.
 Breakwater at Port Arthur, Ont.
 Wharf at Southampton, Ont.
 Breakwater superstructure at Port Stanley, Ont.
 Bridge at Chapeau, Que.
 Ice piers on Annapolis river, Annapolis, N.S.
 Kippawawa dam.
 Timiskaming dam.
 Breakwater at Cape Bald, N.B.
 West end entrance Toronto harbour, Toronto, Ont.
 Negro Point breakwater, St. John, N.B.
 Wharf, Arnprior, Ont.

In the past year, 8,800 briquettes and 107 chemical analyses and 484 specific gravity tests were made in this laboratory, which number of briquettes, chemical analyses and specific gravity tests show a good increase over last year.

I have the honour to be, sir,

Yours obediently,

GEO. E. PERLEY,

Engineer in Charge.

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CONCLUSION.

Reviewing this annual report, my attention is attracted not particularly to the number of works executed during the past fiscal year but rather to the magnitude of the many that are absolutely required to keep pace with the demands of our growing trade and commerce.

Down by the sea, we still build numerous shelters and landings for the benefit and protection of fishing boats and coasters. At St. John harbour; along the gulf; up the St. Lawrence, and on the Great Lakes, a heavier class of harbour works and of a more permanent character are being constructed. These call for the greatest ability and intelligence with a thorough knowledge of the best practice to project, plan and execute.

In the past thirty years, since I first entered the service, important and radical changes have taken place in the mode of construction; the wooden cribwork partly filled with stone and of a semi-temporary character, which was sufficient for the requirements of the times, is being replaced as the increasing business of the country has compelled us to resort to structures of iron and concrete, and we are gradually changing the forms of temporary works to permanent.

Parliament has generously granted sufficient sums of money to do this and, I hope, will continue in order to place us in a position to supply all immediate and many prospective requirements.

The improvement of harbour and river works from the sea to the head of the Great Lakes are now becoming fairly sufficient to handle the present business of the immediate vicinity and the through traffic, but the expanding west will soon demand our attention.

When so many eyes are turned to the newly settled country on the other side of the Great Lakes, I might be permitted to say that, it behooves this branch of the service to keep abreast of the times and, in a measure, anticipate the demands of the future. A careful survey is now being made of the western waterways, not, I admit, as exhaustive as that of the Georgian Bay ship canal, but sufficient to place us in a position to take up the work of development whenever required and provided for.

Other than harbour and river improvements, with the necessary surveying, planning and execution of the numerous works which are described in the body of the report, there are important surveys and examinations to be undertaken: the St. John river boundary; the waterways contiguous to the St. Lawrence; the necessary primary work of acquiring information to improve the great rivers of British Columbia; surveys tending to the acquiring of information relative to the natural resources of Canada; the storage of waters, &c.

On October 1, 1909, Mr. Gillmor Brown, C.E., was appointed to the position of Assistant Chief Engineer, and gave every evidence of soon becoming a valuable and efficient officer in the department when, absent on duty, he suddenly took sick and died on March 17.

Mr. A. R. Dufresne, who has rendered valuable service to the department since his entry therein, on May 1, 1900, was appointed on May 4 last, to succeed Mr. Brown. The intelligence, ability and natural inclination for hard and methodical work, as already exhibited by Mr. Dufresne, will materially improve this branch of the service.

With every confidence in my assistants, it affords me great pleasure to thank them for their earnest endeavours in so successfully carrying out the works entrusted to them, and I can freely state that no abler body of engineers, nor more competent nor conscientious employees can be found in any other branch of the service.

Respectfully submitted,

EUGENE D. LAFLEUR,

Chief Engineer.

PART V

REPORT ON GOVERNMENT TELEGRAPH LINES

FOR THE

FISCAL YEAR ENDED MARCH 31, 1910

DEPARTMENT OF PUBLIC WORKS.

OFFICE OF THE GENERAL SUPERINTENDENT,

OTTAWA, ONT., June 18, 1910.

R. C. DESROCHERS, Esq.,

Acting Secretary, Department of Public Works,

SIR,—I beg to submit herewith my report on the Government Telegraph Service for the fiscal year ended March 31, 1910.

This report, as usual, is prefaced by a list to the present date of the land lines and cables in operation; with data of lengths, year of construction, number of offices at present established, and an estimate of the traffic handled in each instance.

The usual tabular statements giving list of offices, operating staff, &c., in the several districts are appended to the report; likewise the tariff sheets, showing the rates charged for messages on the several lines.

I have the honour to be, sir,

Your obedient servant,

D. H. KEELEY,

General Superintendent.

THE GOVERNMENT TELEGRAPH SERVICE

DOMINION OF CANADA

HEAD OFFICE: DEPARTMENT OF PUBLIC WORKS, OTTAWA.

(June 1, 1910.)

EXECUTIVE.

The Hon. William Pugsley, Minister of Public Works.

J. B. Hunter, Esq., Deputy Minister of Public Works.

STAFF AT HEADQUARTERS.

D. H. Keeley, General Superintendent.

M. W. Crean, Technical Assistant to Superintendent.

J. E. Gobeil, Technical Assistant to Superintendent.

Miss A. Hardecastle, Secretary to General Superintendent.

J. P. Demartigny, Accountant, Telegraph Branch.

J. E. Bray, Assistant Accountant, Telegraph Branch.

GENERAL INSPECTORS.

A. B. McDonald, North Sydney, Cape Breton, lines in Nova Scotia and New Brunswick.

J. S. Macdonald, Edmonton, Alta., lines in Northwest and south British Columbia.

SUPERINTENDENCIES.

Edwin Pope, Quebec, dist. supt., North Shore and G.N.W. traffic.

J. C. Taché, dist. supt., Chicoutimi district and North Shore to Bersimis.

É. H. Tetu, Long Point of Mingan, dist. supt., North Shore, East Bersimis.

P. Pouliot, dist. supt., Quarantine line, &c., to Grosse Isle.

A. Malouin, dist. supt., West Point, Anticosti Island.

A. Le Bourdais, Grindstone, dist. supt., Magdalen Islands.

D. C. Dawson, St. John, N.B., dist. supt., Cape Breton system.

Mrs. C. C. Seely, Grand Manan, N.B., dist. supt., Bay of Fundy system.

J. McR. Selkirk, Leamington, Ont., dist. supt., Pelee Island system.

Robt. C. Macdonald, Edmonton, Alta., dist. supt., Northwest Territories.

Wm. Henderson, Victoria, dist. supt., British Columbia, south.

C. S. Stevens, Summerland, B.C., supt., Penticton line.

J. T. Phelan, Vancouver, B.C., supt., Yukon system.

H. Gilchen, Whitehorse, Y.T., dist. supt., Atlin-Boundary.

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GOVERNMENT TELEGRAPH SERVICE.

| Location of Lines. | Points connected. | Year. | LENGTH OF LINES. | | | Number of Offices. | Messages Sent. |
|--------------------|--|---------|------------------|---------|--------|--------------------|----------------|
| | | | Land Lines. | Cables. | Total. | | |
| | | | Miles. | Kt's. | | | |
| Newfoundland.. | Port au Basque—Cape Ray..... | 1883 | 14 | ..... | 14 | 2 | |
| Nova Scotia... | North Sydney—Meat Cove (with loops).. | 1880-02 | 165½ | | | | |
| " | Across Bras d'Or channel..... | 1880 | | | | | |
| " | " St. Anns Harbour..... | 1887 | | | | | |
| " | " Ingonish Harbour..... | 1887 | | | 167 | 18 | |
| " | French River..... | | | | | | |
| " | Englishtown..... | | | | | | |
| " | Big Bras d'Or—Kempt Head..... | 1904 | 20 | | 20 | 3 | |
| " | Meat Cove—St. Pauls Island..... | 1890 | | 20 | 23 | 1 | |
| " | On St. Pauls Island..... | 1890 | 3 | | | | |
| " | Bay St. Lawrence to Money Point..... | 1907 | 8 | | 8 | 4 | |
| " | Mabou—Meat Cove..... | 1887-00 | 109 | | 109 | 9 | |
| " | Barrington—Cape Sable..... | 1883 | 16 | | | | |
| " | Across Bear Point Channel..... | 1883 | | 1 | 17½ | Leased. | |
| " | Lt. House Channel..... | 1883 | | | | | |
| " | Mabou—Port Hawkesbury..... | 1903 | 41½ | | 73½ | | |
| " | Port Hawkesbury—St. Peters..... | 1903 | 32 | | | | |
| " | St. Peters—Main à Dieu..... | 1904 | 84½ | | 131½ | 16 | |
| " | Main à Dieu—Scatarie..... | 1902-09 | 1 | 3½ | | | |
| " | On Scatarie Island..... | 1904 | 7½ | | | | |
| " | Gabarous—North Sydney..... | 1904 | 35½ | | 36 | | |
| " | Little Bras d'Or—Kempt Head..... | 1905 | 36 | | 37 | 13 | 14,786 |
| " | North Sydney—Eskasoni..... | 1905 | 37 | | 37 | | |
| " | Castle Bay—Gran t Narrows..... | 1908 | 16 | | 16 | 3 | |
| " | North Sydney—Little Bras d'Or (second wire)..... | 1906 | 6 | | 6 | | |
| " | Grand River—Enon..... | 1907 | 19½ | | 19½ | 2 | |
| " | Enon—Gabarus..... | 1909 | 31 | | 31 | | |
| " | Strathlorne—Wycococinagh..... | 1900 | 32½ | | 32½ | 4 | |
| | <i>Port Hood, Island Branch:</i> | | | | | | |
| | (Length of construction in loop.) | | | | | | |
| " | On mainland at Port Hood..... | 1907 | ½ | | | | |
| " | Port Hood—Smiths Island..... | 1907 | | 2 | | | |
| " | On Smiths or Inner Island..... | 1907 | 4 | | 13½ | 4 | |
| " | Smiths Island to Henry Island..... | 1907 | | 3 | | | |
| " | On Henry or Outer Island..... | 1907 | 4 | | | | |
| New Brunswick.. | Chatham—Esquimaux..... | 1885 | 42½ | | 42½ | 6 | 907 |
| | <i>Bay of Fundy System:</i> | | | | | | |
| " | Eastport—Campobello..... | 1880 | | 1½ | | | |
| " | On mainland Eastport..... | 1880 | | | | | |
| " | On Campobello Island..... | 1880 | 7½ | | | | |
| " | Campobello—Grand Manan..... | 1880 | | 7½ | 44½ | 11 | 2,064 |
| " | On Grand Manan Island..... | 1880 | 25½ | | | | |
| " | Grand Manan—Cheneys Island..... | 1890 | | | | | |
| " | On Cheneys Island..... | 1890 | | | | | |
| " | Cheneys Island—Whitehead Island..... | 1890 | | | | | |
| " | Partridge Island—Fort Dufferin..... | 1900 | | | 4 | | |
| | <i>Magdalen Island System:</i> | | | | | | |
| Quebec..... | Meat Cove, C. B.—Magdalen Islands..... | 1880 | | 55 | | | |
| " | On Magdalen Island..... | 1881-02 | 83½ | ½ | | | |
| " | Grosse Isle—Byron Island..... | 1902 | | 11 | | | |
| " | On Byron Island to Dingwalls..... | 1902 | 1 | | 176 | 16 | 2,099 |
| " | " Dingwalls to Lt. House..... | 1909 | 5 | | | | |
| " | House Harbour—Pointe Basse (loop wire)..... | 1902 | 8 | | | | |
| " | Pointe Basse—South Beach (loop wire)..... | 1905 | 6 | | | | |
| " | Grindstone—Barachois (loop wire)..... | 1909 | 6 | | | | |
| | Carried forward..... | | 909½ | 109½ | 1,018½ | 112 | 19,856 |

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE—Continued.

| Location of Lines. | Points connected. | Year. | LENGTH OF LINES. | | | Number of Offices. | Messages Sent. | |
|--------------------|--|---------|------------------|---------|---------|--------------------|----------------|--|
| | | | Land Lines. | Cables. | *Total. | | | |
| | | | Miles. | Kt's. | | | | |
| | Brought forward..... | | 2,834½ | 244½ | 3,078½ | 260 | 59,921 | |
| Northwest..... | Qu'Appelle—Edmonton | 1883 | 625 | | 625 | 16 | 19,202 | |
| " | Moosejaw—Wood Mountain | 1885 | 90½ | ..... | 90½ | 3 | | |
| " | Wood Mountain—Willow Bunch | 1904 | 39½ | ..... | 39½ | 5 | | |
| " | Edmonton—Indian Ag. & Stoney Plain | 1904 | 24 | ..... | 24 | | | |
| " | Edmonton—Athabaska Ldg. | 1904 | 98 | ..... | 98 | 3 | | |
| " | Duck Lake—Batoche | 1902 | 9 | ..... | 12½ | | | |
| " | Duck Lake—Indian Agency | 1902 | 3½ | ..... | 36 | 3 | | |
| " | Edmonton—St. Albert | 1887 | 9 | ..... |  |  |  |  |
| " | St. Albert—Qui Barrie and Alexandria | 1902 | 27 | ..... | 58 | 1 | | |
| " | Lloydminster (loop) near Pitt | 1904-09 | 58 | ..... | 11½ | 2 | | |
| " | Victoria—Andrew and Whitford | 1904-05 | 11½ | ..... | 11 | 1 | | |
| " | Qu'Appelle—Lipton (loop) | 1906 | 11 | ..... | 6½ | 1 | | |
| " | Saddle Lake—Industrial School | 1900 | 6½ | ..... | 6½ | 1 | | |
| " | Kamsac—Indian Agency | 1907 | 6½ | ..... | 28 | 3 | | |
| " | Fort Qu'Appelle to File Hills | 1908 | 28 | ..... | 70 | 1 | | |
| " | Athabaska Ldg. towards Peace River .. | 1909 | 70 | ..... | 70 | 1 | | |
| British Columbia | Victoria—Cape Beale | 1891 | 118 | | 118 | 12 | 3,383 | |
| " | Nanaimo—Comox | 1893 | 81 | | 81 | 12 | 15,978 | |
| " | Parksville—Alberni | 1895 | 29½ | ..... | 29½ | 2 | | |
| " | Alberni—Cape Beale | 1899 | 57 | ..... | 57 | 467 | | |
| " | " Clayoquot | 1902 | 96½ | | 96½ | 6 | 2,126 | |
| " | " Sechart Branch | 1907 | 9 | ..... | 9 | 1 | | |
| " | Kamloops—Lower Nicola | 1899 | 67 | | 67 | 36 | 28,520 | |
| " | Lower Nicola—Penticton | 1905 | 168 | ..... | 168 | | | |
| " | Vernon—Kilowna | 1905 | 35 | | 35 | 2 | | |
| " | Kilowna—Penticton | 1906 | 45 | 1½ | 46½ | | | |
| " | Vernon—Lumby | 1907 | 18 | | 18 | 2 | 1,754 | |
| " | Golden—Windermere | 1901-02 | 92 | ..... | 92 | 4 | | |
| " | Duncan Station—Salt Spring Island | 1902-04 | 24 | | 24 | 5 | 1,572 | |
| " | Salt Spring Island—North Pender Island .. | 1907 | 16 | 4½ | 20½ | 5 | | |
| " | North Pender—South Pender | 1903 | 7 | | 7 | 5 | 366 | |
| " | Pender Island—Mayne Island | 1908 | 11 | 1 | 12 | | | |
| " | Mayne Island—Galino Island | 1908 | 4 | 1 | 5 | 2 | + | |
| " | Nanaimo—Gabriola Island | 1908 | 18 | 1 | 19 | 4 | | |
| " | Courtney—Campbell River | 1908 | 40 | | 40 | 3 | + | |
| " | Union—Denman and Hornby Islands .. | 1907 | 14 | 2 | 16 | 3 | + | |
| " | Victoria—Metchosin | 1908 | 14 | | 14 | 1 | + | |
| " | Kamloops—Louis Creek | 1908 | 36 | | 36 | 5 | ± | |
| Yukon..... | Ashcroft—Dawson and Boundary | 1899-01 | 1,845 | | 2,252½ | 68 | 61,297 | |
| " | Hazelton—Port Simpson and Aberdeen .. | 1901-02 | 202½ | ..... |  |  |  |  |
| " | Tagish—Cariboo Crossing | 1901 | 18 | ..... |  |  |  |  |
| " | 150 mile Station—Quesnelle Forks | 1902 | 64 | ..... |  |  |  |  |
| " | Ashcroft—Lillooet | 1896 | 62 | | 215 | | | |
| " | Quesnelle—Barkerville | 1887 | 61 | ..... |  |  |  |  |
| " | Ashcroft—Quesnelle (local wire) | 1878 | 87 | 215 | 215 | ..... |  |  |
| " | Hootalinqua—Livingstone Creek | 1907 | 35 | ..... | 35 | 2 | | |
| " | Aberdeen—Prince Rupert | 1907 | 40 | ..... | 40 | 1 | | |
| | Total | | 7,494½ | 255½ | 7,749½ | 479 | 194,586 | |

*For convenience in totalling, the knots of cable are regarded as statute miles.

†Count of messages included with Nanaimo—Comox line.

++ " " " Victoria—Cape Beale line.

+++ " " " Kamloops—Lower Nicola, &c.

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REPORT ON THE GOVERNMENT TELEGRAPH SERVICE, 1909-10.

EXPLANATORY NOTES.

The tabular statement prefacing this report shows the total mileage, &c., of the telegraph lines operated by the government. Lines that have been subsidized or constructed and transferred by the government for operation by private companies are not included in this list.

The matter in the following pages comprises a statement of specific actions taken in the course of the year; and as a new departure, the particulars are given in separate reports hereto subjoined, that have been obtained, where practicable, from the district superintendents, and will be found indicated under the several division headings. In any case where no particular reference is made to a line found in the above-mentioned list, the understanding intended to be conveyed is that the line has been satisfactorily operated throughout the year, without any change of conditions since last made mention of in the annual report.

NEWFOUNDLAND.

The line from Port au Basque to Cape Ray continued to be operated as heretofore, under an arrangement with the Anglo-American Telegraph Company.

MARITIME PROVINCES.

Cape Breton.—Grand River—Gabusus.—The branch line from Grand River to Enon, $19\frac{1}{2}$ miles, built in 1907, was, last season, carried through to Gabarus via Victoria Bridge by day labour under the direction of Mr. H. C. Gunn, of Gabarus. The pole line erected (comprising 846 poles of native wood, spruce and fir obtained along the route) extended from Enon to the head of Gabarus Lake, a distance of 26 miles, where it joined with the main line on the poles of which the wire was carried the further distance of 5 miles to Gabarus. The total length of wire from Grand River to Gabarus ($19\frac{1}{2}+31=50\frac{1}{2}$ miles.)

Strathlorne—Wycocomagh.—The construction of a line from Strathlorne to Wycocomagh, that had been begun in the season of 1908, was continued in the course of the past year and completed (final stringing of wire) in February, 1910. The work was done by day labour under the foremanship of the local general repairer, Mr. A. V. McLellan and the poles erected were of native wood, tamarack, &c., had along the route. The length of this line comprises 29 miles of poles and $32\frac{1}{4}$ miles of wire; a loop being required to reach the village of West Lake, $2\frac{1}{4}$ miles distant from the main route.

Money Point Lighthouse line.—By an oversight, mention was omitted in earlier reports of the construction, in the autumn of 1907, of a branch line from Bay St. Lawrence to Money Point for operation in the interest of the Signal Service. The length of the line is 8 miles. It was built by the local general repairer, Mr. S. S. Burke, of Ingonish. Tamarack poles (in all 280), had along the route, No. 6, galvanized iron wire, and white porcelain insulators, were used in the construction; and the equipment for operation was of standard Bridging Bell Telephone apparatus. Connections were established at four points as shown in one of the accompanying tabular statements.

St. Paul's Island Cable.—This cable became interrupted on the 4th May, 1909. The ss. *Tyrian* was as early as practicable sent to attend to it and communication was

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restored on the 28th August. On the 3rd December, it was again interrupted and the ss. *Tyrian* being available, restored it on the 24th, after which the vessel went to Halifax for winter quarters. The first of these interruptions was 7 miles off St. Paul's Island and was due to fouling of the cable by a vessel's anchor; in the second instance it was due to the action of a storm within a mile of the landing at St. Paul's Island.

Big Bras d'Or Cable.—The $\frac{1}{2}$ -knot section across the Big Bras d'Or channel became defective on the 14th December and the ss. *Tyrian* being at North Sydney, was sent round to put it in order. Leak found and fault removed on the 18th same month.

New Offices, Changes, &c., on the Cape Breton Lines.—A record of new offices opened, &c., will be found in the appended report (No. 1) from the District Superintendent, Mr. D. C. Dawson.

Tancook Islands.—As an aid to the Blandford Telephone Company, there was contributed by the Department and laid by means of the ss. *Tyrian* in May, 1909, two sections of submarine cable for the extension of their system to the islands. The lengths laid down were of the G. P. deep sea type (part of the section formerly in use between Anticosti and Bryon Island) Blandford to Little Tancook, $2\frac{1}{2}$ knots, and Little Tancook to Great Tancook, $1\frac{1}{4}$ knots.

Bay of Fundy—Pole line renewal.—In the spring of 1909, there was a lot of 75 poles (cedar) 23 feet long and 5 inches across the top obtained and used in the renewal of the line at Campobello.

Telephone Renewals.—In consequence of the service having become unsatisfactory through deterioration after long use of the apparatus on the line from Seal Cove to Southern Head, there were five sets (one of them for reserve) of Bridging Bell instruments provided in the summer of 1909.

Deer Island Cables.—The Deer Island cables that were laid by the department in 1904 as an aid to the local telephone company, were reported to be out of order in the spring of 1909, and the ss. *Tyrian* was directed to make an examination and repair. A break was found about midway of the stretch (3 knots) between Deer Island and Eastport; and a break was also found in the Deer Island-Campobello section (2 knots) about a mile from the Campobello side. The sheathing wires of the cables were badly corroded. Repairs were effected and communication restored on the 24th April, 1909.

Grand Manan—Campobello Cable.—This cable became intermittently interrupted on the 23rd June, 1909, and finally gave out on the 6th July. The ss. *Tyrian* was sent to the locality as promptly as possible and made the repair on the 13th August. The cable was found to be chafed off about half a mile from the landing place at Long Eddy, Grand Manan.

A report (No. 2) from the District Superintendent, Mrs. C. C. Scely, covering the operation of the Bay of Fundy system is hereto appended.

Magdalen Islands.—On Bryon Island an extension was made from Mrs. Dingwall's to the Lighthouse at the other end of the Island, a distance of $3\frac{1}{2}$ miles, for which 150 cedar poles were sent over from Gaspé. The new office was put in operation on the 28th September, 1909.

On Grindstone Island there was a loop extension made to Cape Verte (Barachois), a distance of 3 miles from the main line, and an office opened on June 22, 1909, with

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Mrs. Gregoire Cyr as agent-operator. The poles (100 cedar) for this line were sent over from Gaspé.

Cable to mainland.—The cable between Old Harry and the mainland (Meat Cove, C.B.) became interrupted on the 27th May, 1909. The ss. *Tyrian* was at the time available and promptly proceeded to make the repair. Communication was restored on the 5th June. This cable again gave out on the 6th January, 1910, after the *Tyrian* had gone into winter quarters at Halifax. As early as it was practicable, after the re-opening of navigation, attention was directed to the requirement and a repair was again effected and communication restored. [Note.—This repair was made on the 15th April, 1910.]

Bryon Island Cable.—This section became inoperative on the 10th April, 1909, and was restored on the 3rd August following. The cable was found to have been crushed by ice at the Grosse Isle landing.

Operation of the Magdalen Island lines.—The appended report (No. 3) from the District Superintendent, Mr. A. LeBourdais, covers the local conditions and operation of the land-line sections throughout the year.

Anticosti Island.—The office at Fox Bay was vacated in August, 1909, by the resignation of Mr. Geo. Cabot, who has removed to the mainland, and it has since remained closed, there being no one locally available to take charge of it. The station is not considered of sufficient importance to warrant engaging elsewhere any one specially to take the agency.

The Gaspé-Anticosti cable that was damaged by ice at the south-west point landing in the spring of 1908, and restored to order by the ss. *Tyrian* before a complete breakdown occurred was again crushed in the same place on the 1st April, 1909, and became intermittently interrupted. The ss. *Tyrian* proceeded as promptly as possible to the spot and made repairs on the 29th May (1909).

The cable between *Long Point of Mingan and Anticosti* gave out on the 8th April, 1909, and was repaired by the ss. *Tyrian* on the 29th July, 1909. The same section was interrupted again on the 1st October and repaired by the ss. *Tyrian* on the 19th of the same month.

The appended report (No. 4) from the District Superintendent, Mr. A. Malouin, covers the operation of the Anticosti system throughout the year.

QUEBEC.

North Shore St. Lawrence and Chicoutimi.—The working conditions as set forth in last year's report, have continued satisfactory and undisturbed. Some general repairs necessary to the upkeep of the telegraph line in several sections of the Chicoutimi district, will be found dealt with in the annexed report (No. 5) from the district superintendent, Mr. J. C. Tache.

Tadousac Cables.—An intermittent trouble occurred in the cable stretch across the Saguenay at Tadousac in March, 1909, and an attempt to clear it was made locally in May, but without satisfactory results. It finally broke down on the 17th June and the traffic of the line was handled round by Chicoutimi until the ss. *Tyrian* was got up from the gulf and made the requisite repair on the 2nd July. At the same time, a second stretch of cable, approximately 1 knot, was laid across the river at Tadousac, thus affording an alternative route between Chicoutimi and Tadousac via St. Catherine's Bay, in addition to the one via Ste. Anne and Sacre Cœur on the other side of the river.

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Cap Salmon Lighthouse.—In the autumn of 1909, connection was made with the Cap Salmon lighthouse, 2 miles distant from the highway, by means of a loop off the main north shore line in the vicinity of St. Simeon. A right-of-way had to be arranged for with the owners of the land over which the line was carried and the several claims are in course of settlement. The office was in operation for a short time from the 30th September, then closed for the winter. It was re-opened again on the 1st April, 1910.

Along the north shore, east of Bersimis, to the Straits of Belle Isle, the line has been maintained in satisfactory order. Repair gangs under the foremanship of the regular lineman in the several sections performed as has been customary, each year, whatever work in the way of general overhauling and clearance of the line and the renewal of bridges, shelter huts, &c., that was called for in the several sections.

Changes and appointments, where any have been made, will be found noted in the tabular statement of offices, agencies, &c., in the appendix.

The accompanying report (5a) from the District Superintendent, Mr. E. H. Tetu, at Long Point of Mingan, contains an account of the operations of the line during the year.

Harrington Island.—Connection was made on the 15th June, 1909, by the construction of a telephone line between the telegraph office at Harrington on the mainland and Dr. Hare's Hospital at Harrington Island. In the construction, 8 poles were erected on the mainland and 30 on the Island; total length of land line $1\frac{1}{2}$ miles; and a length of 3.30 knots of cable (G.P. deep sea type with shore ends of 800 feet on the main shore and 1,200 feet at the island landing) laid by the ss. *Tyrian* on that date.

Belle Isle Cable.—The Chateau Bay-Belle Isle stretch ($22\frac{1}{2}$ knots) no longer needed, owing to the permanent establishment by the Department of Marine and Fisheries of a wireless station at Belle Isle, was picked up by the ss. *Tyrian* on the 25th June, 1909, for use elsewhere, as occasion might require; and at the same time the Marconi mast that had formerly been in use at Chateau bay was taken down and subsequently (12th July, 1909) transferred by the ship to the agency of the Marine Department at Quebec.

Quarantine System.—Subsequent to the repairs made to the Ange-Gardien and Isle aux Reaux cables in May, 1909, as mentioned in last year's report, the quarantine system continued free of interruption throughout the season and after the ss. *Tyrian* had got through with the work at Tadousac, elsewhere mentioned, the Crane Island-Montmagny section was taken in hand in the interest of the signal service and restored on the 10th July, 1909. This line affords direct telephone communication between Crane Island and Quebec by connection at Montmagny with the trunk line of the Bell Telephone Company.

[*Note.*—This Crane Island-Montmagny cable became again interrupted on the 12th December, 1909, and the ss. *Tyrian* being early available in the spring of the present year was brought up from the gulf and restored the connection on the 2nd May, 1910. The cable sections at Ange Gardien-St. Pierre were interrupted from the 3rd March till the 9th April, through damage by ice passing down the river. The St. Francois-Isle Reaux section was also damaged and gave out on the 28th April. It was repaired on the 6th May by the ss. *Tyrian*, which happened to be at hand; and the ship's services, while in the vicinity, were directed to an examination and overhauling of the several sections and added a fourth stretch (for reserve) between Ange Gardien and St. Pierre where connections are afforded for the local telephone service between Quebec and Orleans Island as well as for the quarantine telegraph system.]

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Operations of the system.—The report (No. 6) hereto appended, from the District Superintendent, Mr. J. T. Pouliot, will be found to contain an account of the operating conditions, etc., through the year.

Beauport-Laval Telephone Line.—In the course of the autumn of 1909, a line was constructed from Beauport to Laval, a distance of 15 miles under the immediate supervision of Mr. J. P. Pouliot, District Superintendent at St. John. Spruce poles 25 feet long and 5 inches across the top, No. 6, galvanized iron wire and white porcelain insulators were used in the construction. The line (single wire) was completed on the 20th November, and under an arrangement made with the Bell Telephone Company for its being operated in conjunction with their Beauport line, connecting with the Central Exchange at Quebec, was equipped and put in operation on the 1st February, 1910, with three stations and a conjoint tariff as mentioned in the tabular statement given in the appendix to this report.

ONTARIO.

Pelee Island Telephone System.—The appended report (No. 7) from Mr. J. McR. Selkirk, District Superintendent at Leamington, will be found to contain, barring the period of interruption, a satisfactory showing as to the maintenance and operation of the system during the year.

Several new stations have been connected on the island section of the system, as shown in the tabular statement in the appendix to this report.

The cable 17½ knots between the mainland and the island became inoperative on the 16th December, 1909, and had to remain so until after the passing down of the lake ice in the spring.

[*Note.*—The repair was in due course taken in hand by Mr. Selkirk and communication was restored on the 21st May, 1910.]

NORTHWEST, BRITISH COLUMBIA AND THE YUKON.

The separate reports (Nos. 8-12), appended hereto from the respective district superintendents, will be found to convey an account of what has been done in these divisions of the service in the course of the fiscal year. The whole, as was the case for the previous twelve months, affords a very satisfactory showing.

TELEGRAPH SERVICE GENERALLY.

Cables ship Tyrian.—As mentioned elsewhere, the ss. *Tyrian*, in the course of the season of 1909, made repairs on the Gaspé-Anticosti and Long Point-Anticosti cables; on the Meat Cove-Magdalen Islands connection; on the Bryon Island and the St. Paul's Island cables, and the short section across Big Bras d'Or channel, all in the Gulf of St. Lawrence, besides repairing the Deer Island cables and the Grand Manan-Campobello cable in the Bay of Fundy and laying the sections connecting the Tanook Islands with the mainland at Blandford, N.S.; and along the north shore, St. Lawrence, there was picked up the Belle Isle cable, connection made between Harrington island and the mainland, and up the river there was repaired the Tadousac cable and a new length laid across the Saguenay, and the connection between Crane island and Montmagny was restored. It was a very busy season throughout, very successful and satisfactory. The personnel of the *Tyrian* as mentioned in my reports for the years 1904-05 and 1907-8 continues unchanged and great credit is due to the entire staff and company of the ship for the celerity with which the vessel was got about in performance of all there was to do and that was done so well. It was on the 21st April (1909) that the *Tyrian* left Halifax to begin the season's work and the 29th December when she returned there to go into winter quarters.

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The appended report (No. 13) from Mr. A. B. McDonald, electrician, conveys a statement of the lengths of the cable handled in the course of the ship's operations.

Telegraph Systems of the Dominion.—As a matter of general interest, pursuant to the statement submitted last year, the latest figures to hand showing the extent of telegraph lines in operation in the Dominion are given hereunder:—

| Canada. | LENGTH OF LINES IN MILES. | | | | LENGTH OF CONDUCTORS IN MILES. | | | | Number of Offices. |
|-----------------------------------|---------------------------|---------------|-------------|--------|--------------------------------|---------------|-------------|--------|--------------------|
| | Aerial. | Under-ground. | Sub-marine. | Total. | Aerial. | Under-ground. | Sub-marine. | Total. | |
| 1910. | Pole line | | | | | | | | |
| Great North Western Telegraph Co. | 11,386 | | | 11,386 | 47,483 | | | 47,483 | 1,227 |
| Canadian Pacific Telegraph | 12,004 | 3 | | 12,007 | 68,721 | 90 | | 68,811 | 1,338 |
| Western Union Telegraph Co. | 2,639 | 32 | | 2,671 | 11,255 | 44 | | 11,299 | 218 |
| Government Telegraph service | 7,494 | | 255 | 7,749 | 7,494 | | 255 | 7,749 | 479 |

REVENUE AND EXPENDITURE.

The revenue and expenditure for each of the government lines in the several districts hereinbefore mentioned, are given in the following table:—

| 1909-10. | Expenditure. | Revenue. | Remarks |
|--|--------------|------------|---------|
| | \$ cts. | \$ cts. | |
| Lower St. Lawrence and Maritime Provinces:— | | | |
| Anticosti lines. | 7,038 15 | 952 67 | |
| Bay of Fundy. | 2,387 98 | 926 54 | |
| Gaspé Local. | | 30 12 | |
| Escuminac. | 676 23 | 212 77 | |
| Magdalen Islands. | 4,830 48 | 905 37 | |
| Father Point Agency. | 500 00 | | |
| Cape Breton lines. | 21,449 94 | 3,169 88 | |
| North Shore (E.B.). | 24,302 51 | 5,010 43 | |
| " (W.B.). | 17,041 22 | 2,175 38 | |
| Quarantine system. | 3,624 63 | 613 62 | |
| Cable ship <i>Tyrian</i> :— | | | |
| Maintenance and repairs. | 47,674 94 | | |
| Subsidies, stationery, line and office material and contingencies. | 7,562 66 | | |
| Gulf general. | 5,195 88 | | |
| Ontario:— | | | |
| Peleee Island line. | 488 30 | 234 74 | |
| Northwest Territories lines. | 38,179 37 | 5,766 27 | |
| British Columbia:— | | | |
| Alberni-Cape Beale. | 1,787 30 | 143 31 | |
| Alberni-Clayoquot. | 4,773 39 | 753 19 | |
| Golden-Windermere. | 2,359 45 | 1,358 31 | |
| Kamloops-Nicola, Penticton. | | | |
| Vernon-Kelowna. | 10,270 68 | 10,858 74 | |
| Dennman-Hornby. | 10 66 | 21 44 | |
| Nanaimo-Comox. | 6,219 91 | 3,846 07 | |
| Nanaimo-Gabriola. | 1,115 31 | 100 92 | |
| Vancouver-Salt Spring. | 1,111 31 | 640 20 | |
| Victoria-Cape Beale. | 10,567 50 | 1,541 82 | |
| B. C. service generally. | 1,725 46 | | |
| Yukon:— | | | |
| Ashcroft-Dawson. | 199,988 24 | 97,485 52 | |
| Telegraph service generally. | 1,784 46 | | |
| Total. | 422,665 96 | 136,747 31 | |

Signal Service messages, Meteorological Service messages and reports, and Fisheries bulletins are handled free of tolls.

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Departmental Telephone Service.—Up to date of this report (June 18th, 1910), the telephone connections with the central office of the Bell Telephone Company at Ottawa, listed as chargeable to the special appropriation, numbered 453, the annual charge for which amounts to \$18,736.25. The connections are distributed amongst the several departments, as hereunder:—

| Department. | Offices. | Residences. | Annual Charge. |
|---|----------|-------------|----------------|
| | | | \$ cts. |
| Agriculture | 12 | 6 | 705 00 |
| Auditor General | 10 | 1 | 495 00 |
| Census | 1 | 1 | 85 00 |
| Customs Department | 8 | 3 | 445 00 |
| Dominion Police | 10 | 3 | 523 00 |
| Exchequer Court | 1 | 1 | 100 00 |
| Finance Department | 8 | 3 | 445 00 |
| Governor General (including Priv. System) | 8 | 3 | 502 75 |
| Geological Survey | 8 | 2 | 400 00 |
| House of Commons | 17 | 3 | 832 50 |
| Indian Affairs | 6 | 2 | 320 00 |
| Inland Revenue | 9 | 3 | 360 00 |
| Interior Department | 49 | 8 | 2,340 00 |
| Justice Department | 8 | 11 | 728 00 |
| Labour Department | 4 | 2 | 240 00 |
| Mounted Police | 3 | 1 | 145 00 |
| Marine and Fisheries Department | 21 | 11 | 1,258 00 |
| Militia and Defence | 31 | 14 | 2,010 00 |
| Parliamentary Library | 1 | 2 | 120 00 |
| Post Office Department | 10 | 6 | 630 00 |
| Privy Council | 7 | 5 | 500 00 |
| Public Works Department | 42 | 17 | 2,521 00 |
| Railways and Canals | 13 | 10 | 880 00 |
| Royal Mint | 1 | ..... | 40 00 |
| Secretary of State | 10 | 5 | 593 00 |
| Stationery and Printing | 11 | 5 | 685 00 |
| Trade and Commerce | 6 | 3 | 365 00 |
| The Senate | 6 | 1 | 268 00 |
| | 321 | 132 | 18,736 25 |

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APPENDED TABLES.

The usual tabular statements of the lines and offices, staff, &c., of the telegraph service, following hereupon, will be found to contain whatever additions or changes have been made up to date.

OTTAWA, June 18, 1910.

D. H. KEELEY,
General Superintendent.

GOVERNMENT TELEGRAPH SERVICE.

NEWFOUNDLAND TELEGRAPH SERVICE.

| No. | Stations. | Inter- mediate Distance. | Agents and Operators. | Memo. |
|-----|---------------------------|--------------------------------|-----------------------|--|
| | | Miles. | \$ cts. | |
| 1 | Port au Basque | 0 | 50 00 or commission. | N.B.—The commission is 25 per cent upon all business to and from the office; said commission guaranteed not to be less than at the rate of \$50 per annum. |
| 2 | Cape Ray Lighthouse | 14 | 50 00 " | |
| | Totals | 14 | 100 00 | |

N.B.—The above short line is constructed in connection with the Signal Service, and connects at Port au Basque with the land line system of the Anglo-American Telegraph Company.

GOVERNMENT TELEGRAPH SERVICE—Continued.
ANTICOSTI TELEGRAPH SYSTEM.

| No. | Stations. | Inter- mediate Distances. | Agents and Operators. | Salaries per Annum. | Date of Appointment. | Memo. |
|-----|-------------------------------------|---------------------------------|------------------------------|------------------------|-------------------------|--|
| | | Miles. | | \$ cts. | | |
| 1 | Fox Bay | 0 | C. Hubert | 200 00 or commission. | Aug. 1, 1909 | Closed Aug. 5, 1909. |
| 2 | Heath Point | 2 | E. Leprie | 100 00 | July 1, 1903 | For local agency. Cable removed, increased to \$100 June 1, 1907. |
| 3 | South Point Lighthouse | 32½ | B. Bradley | 360 00 per annum | " 1, 1881 | " \$360 " 1, 1908. |
| 4 | Shallop Creek | 17½ | Jos. Bourget, gen. repairer. | 420 00 | " 17, 1906 | Plus \$1 per day when on duty as general repairer. |
| 5 | Salt Lake | 52½ | Mrs. Bourget, operator | 100 00 | " 17, 1906 | Increased to \$100 June 1, 1908. |
| 6 | Southwest Pt. Lighthouse. | 15 | A. Lesnieux | 480 00 | " 1, 1901 | " \$490 " 1, 1908. |
| | Jupiter River | 7 | L. Lemieux | 180 00 | " 1, 1908 | |
| | Order River | 17½ | ..... | 50 00 or commission. | | |
| | Boeie River | 22 | ..... | 50 00 | | |
| | Cape Eagle (Ellis Bay) | 16 | Jac. Duguay | 100 00 | June 20, 1906 | Increased to \$100 June 1, 1908. |
| 7 | West Point Lighthouse | 9 | A. Malouin, dist. supt. | 404 00 per annum | Aug. 1, 1909 | " \$404 " 1, 1908. |
| | | | operator | 100 00 | " 10, 1881 | |
| | | | Loz. " | 480 00 | | |
| 8 | English Bay | 3 | F. Cabot | 360 00 | July 1, 1882 | Increased to \$360 June 1, 1908. |
| | Mechastic Bay (cable land- ing). | 14½ | H. Malouin, gen. repairer.. | 420 00 | Sept. 10, 1909 | From Mechastic Bay to South West Point. |
| | Totals | 225½ | | 3,854 00 | | |

Southwest Point connects with L'Anse à Fougère, Gaspié, by cable 44½ knots; and from Mechastic Bay connection is made with Long Point of Mingan by cable 21 knots.

| | | | | | | |
|---|------------------------|-------|--------------------|--------|---------------------|--|
| 0 | L'Anse à Fougère ..... | ..... | Thos. Dupuis | 17 00 | ..... | Special allowance for the cable terminus. A testing station only.* |
| 1 | Gaspié Basin | 28 | J. J. Aunett | 540 00 | Oct. 16, 1881 | Transfer office. Connection with G. N. W. telegraph system. The salary was \$480 per year previous to January 1, 1908. |
| | | 28 | | 557 00 | | |

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GOVERNMENT TELEGRAPH SERVICE—Continued

MAGDALEN ISLANDS SYSTEM.

| No. | Stations. | Inter- mediate Distance. | Agents and Operators. | Salaries per annum. | Date of Appointment. | Memo. |
|---------------------------|--|--------------------------------|----------------------------|-----------------------|-------------------------|--|
| | | | | | | |
| | | Miles. | | \$ cts. | | |
| MAGDALEN ISLANDS SECTION. | | | | | | |
| 1 | Amherst. To loop. | 0 | Miss J. Shea. | 50 00 or commission. | Oct. 1, 1882 | The Commission is 25 per cent on all business to and from the office in each instance; said commission guaranteed to be not less than at the rate of \$50 per annum. |
| 2 | Amnigny (on loop). | 4½ | | 50 00 | | |
| 3 | Amherst Lighthouse. To main line. | 24 | Wm. Renaud, repairer. | 120 00 | June 9, 1908 | |
| 4 | To cable. | 44 | Wm. Cormier | 50 00 | " 11, 1881 | Plus \$1 per day when absent on duty. |
| 5 | Cable stretch. | 24 | | | | |
| 6 | | 6½ | J. G. Binet, gen. repairer | 500 00 | Dec. 1, 1900 | |
| 7 | Etang du Nord village | 1½ | Mrs. A. Binet | 100 00 | " 1, 1881 | Two wire loop line. |
| 8 | Etang du Nord Lighthouse (on loop). | 1½ | N. Arsenault | 50 00 | Sept. 1, 1901 | |
| 9 | To main line. | 1½ | W. Leslie. | Commission 25 p.c. | May 20, 1887 | |
| 10 | Grindstone West. | 7 | A. Le Bourdais, dis. supt. | 900 00 | Aug. 17, 1880 | Plus \$1 per day when absent on duty. The salary was \$720 per annum prior to July 1, 1908. |
| 11 | To cable (on loop). | 1 | Mrs. Lebourdais, oper. | 180 00 | Sept. 15, 1883 | |
| 12 | Cable stretch (on loop). | 4 | J. J. Lebourdais | 444 00 | May 25, 1904 | |
| 13 | House Harlour | 24 | Camille Delancy | 50 00 or commission. | June 1, 1888 | Temporary assistant. |
| 14 | Point Basse. | 3 | 11. Arsenault | 50 00 | Aug. 1, 1902 | |
| 15 | South Beach To main line (wire). | 3 | F. Chevrier. | 50 00 | July 1, 1905 | |
| 16 | To main cable. | 84 | | | | For repeating station. Prior to Dec. 1, '02, the allowance was \$200 and commission for local agency. |
| 17 | Cap Vert (on loop). | 97 | Mrs. G. Cyr | 50 00 | June 22, 1909 | |
| 18 | To main line | 12 | | | | |
| 19 | Cap Vert (on loop). | 12 | N. Clarke | 360 00 or commission. | June 1, 1888 | |
| 20 | Wolfe Island. | 114 | J. Quinn | 180 00 | Dec. 1, 1902 | |
| 21 | Grosse Isle. | 9 | L. C. Clarke | 500 00 | Mar. 8, 1907 | |
| 22 | Old Harry. | 9 | Mrs. F. Atkins. | 50 00 | Feb. 18, 1882 | |
| 23 | Grand Entry | 5½ | | | | |

Total mileage, Magdalen Islands systems: Land wires, 102; Cables, 80½; Pole Line, 82½.

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GOVERNMENT TELEGRAPH SERVICE.
MAGDALEN ISLANDS SYSTEM—*Concluded*.
MAGDALEN ISLANDS SECTION—*Concluded*.

| No. | Stations. | Inter- mediate Distance. | Agents and Operators. | Salaries per Annum. | Date of Appointment. | Memo. |
|---------------------------------|--|--------------------------------|---|----------------------|-------------------------|---|
| | CABLE CONNECTIONS. | Miles. | | \$ cts. | | |
| | Grosse Isle | 0 | | | | |
| | Old Harry (wire only) | 9 | | | | |
| | <i>Cable to Meat Cove, Cape</i> | | | | | |
| | Boston | 55 | | | | |
| | Grosse Isle | 0 | | | | |
| | <i>Cable to Bryon Island</i> | 11 | | | | |
| | Bryon Island | 1 | W. Dingwall | 150 00 or commission | Jan. 1, 1903 | Two wire loop line from terminal hut for Grosse Isle cable. |
| | Bryon Lighthouse | 3½ | P. Chevier | 50 00 " | | To be completed in season of 1910. |
| | Amherst | 0 | | | | |
| | <i>Cable to Entry Island</i> | 6¼ | | | | |
| | Entry Island Lighthouse | 2 | | | | |
| | | 162¼ | | | | |
| NORTH SYDNEY—MEAT COVE SECTION. | | | | | | |
| 1 | Meat Cove* | 0 | Mrs. H. L. McEachern | 50 00 or commission | Sept. 1, 1907. | *The commission is 25 p.c. of the tolls for the government line on all business to and from the office in each instance; said commission guaranteed to be not less than at the rate of \$50 per annum. Cable station at Bay St. Lawrence in place of Meat Cove since September 1, 1906. This office was formerly in charge of the late Mr. J. Y. Nichols. Formerly in charge of Mr. Gros, Brewer resigned. |
| | To loop | 7 | | | | |
| 2 | Bay St. Lawrence (loopwire) | ½ | | | | |
| 3 | Money Point (Branch line) | 8 | { V. Thériault | 720 00 | May 1, 1902 | |
| 4 | Aspy Bay | 4½ | { Mrs. V. Thériault, Asst. See accompanying table. | 420 00 | May 1, 1902 | |
| 5 | Cape North Inland | 5 | R. G. Zwicker | 50 00 or commission | Jan. 19, 1910. | |
| | To loop | 1 | { N. A. McDonald | 50 00 " | May 13, 1904 | |
| 6 | Dingwall (loopwire) | 5½ | { Joe O'Brien | 50 00 " | Nov. 1, 1907 | |
| | To loop | 10 | M. McLeod | 50 00 " | April 1, 1887 | |
| 7 | Neils Harbour (loopwire) | 2½ | Mrs. S. S. Burke | 50 00 " | June 1, 1904 | |
| 8 | Ingonish | 9 | Mrs. M. C. Williams | 50 00 " | Jan. 11, 1910. | |
| 9 | Ingonish Ferry (4 mile cable included) | 10½ | Miss Anna McLeod | 50 00 " | Oct. 1, 1903 | |
| 10 | Wreck Cove | 24 | Miss Mary Morrison | 50 00 " | May 18, 1908 | |
| 11 | Breton River | 5 | John McDonald | 50 00 " | April 1, 1889 | |
| 12 | Breton Cove | 2 | D. B. McLeod | 25 p.c. commission | July 19, 1907 | |
| 13 | Indian Brook | 7 | { Sadie McDonald | 50 00 or commission | Feb. 1, 1907 | |
| | To loop | 2 | | | | |

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| | | | | | | |
|----|--|------|-------------------------------|--|--------------------------|---|
| 14 | Murray (on loop)..... | 8 | R. B. Matheson..... | 50 00 | Jan. 29, 1902 | Closed during winter of 1906-10. |
| 15 | North River Bridge (on loop)..... | 2 | { D. J. Morrison..... | 50 00 | Oct. 5, 1909 | |
| 16 | To main line..... | 10 | | | | |
| 16 | Englishtown (¾ mile cable included)..... | 4 | W. Bingham..... | 120 00 and commiss., and 25 p.c. R. & Cks..... | July 19, 1892 | Switching point for Baddeck line. Closed Dec. 31, 1899. |
| 17 | South Gut (on loop)..... | 5 | L. M. Anderson..... | 100 00 and 25 p.c. R. & Cks..... | June 17, 1904 | Salary.—\$120 per year previous to this appointment. Former Agent Mr. A. Anderson. This loop to Baddeck starts from and returns to Englishtown. |
| 18 | Baddeck (on loop)..... | 13 | | | | |
| 19 | To Englishtown | 18 | Miss A. Morrison..... | 50 00 or commission | Dec. 2, 1909 | |
| 20 | Kellys Cove (New Campbellton)..... | 12 | D. Livingston..... | 100 00 | Jan. 1, 1889 | Increase from \$50 to \$100 since November 1, 1904 |
| 21 | Big Bras d'Or (¾ mile cable included)..... | 2½ | Miss D. E. Grantayner..... | 50 00 | Dec. 1, 1906 | The commission is 50 p.c. on local business and 25 p.c. on through messages; and covers supervision of line and office accommodation at North Sydney. |
| 22 | Little Bras d'Or (350 ft. cable included)..... | 8 | W. U. Tel. Co..... | Commission only | | |
| 22 | North Sydney..... | 4½ | Miss B. Bingham, Englishtown | 444 00 | Nov. 1, 1902 | |
| | General Inspector | | A. B. McDonald, North Sydney | 1,300 00 | May 9, 1905 | Allowance of \$300 per year in addition for office rent, &c. Mr. McDonald accompanies the s.s. <i>Tyrian</i> as electrician in connection with cable laying and repairing. |
| | District Superintendent, for all lines in Cape Breton | | D. C. Dawson, St. John, N. B. | 720 00 | Jan. 24, 1892½ | Latest adjustment of allowance dates from July 1, 1907. The C. B. lines are operated in conjunction with the Western Union Telegraph. |
| | Total..... | 177½ | | 2,674 00 | | |
| | Miles of Wire 176½. " Cable 1. " Pole line 144½. | | | | | |
| | Repairs Sections. | | | | | |
| | General— | | | | | |
| | Meat Cove—Big Bras d'Or | 162½ | S. S. Burke, Ingonish..... | 480 per annum | April 1, 1904 | Horseshire allowed in addition since Dec. 1, 1903. |
| | Big Bras d'Or—North Sydney | 15 | Jos. Logue, North Sydney | (See Eskasoni Line, &c.)..... | | |
| | Local | | | | | |
| | Meat Cove—Money Point | 20 | August S. McDonald..... | 80 00 per annum | June 10, 1910 | Notes.—The rates of allowance are as adjusted in June 1910. In reckoning the repair sections, loops (2 wire lines) are taken as equivalent to 50 p.c. additional pole line. Thus the Murray loop 20 miles of wire and 10 miles of poles is equivalent to 15 miles of pole line. |
| | Aspy Bay..... | 24 | M. McCaskell..... | 90 00 | Prior to June, 1910..... | |
| | Nells Harbour—Ingonish | 21½ | Frank Warren..... | 90 00 | " " " " | |
| | Ferry..... | | | | | |
| | Ingonish Ferry—Englishtown | 29 | N. M. McLeod..... | 100 00 | " " " " | |

*Meat Cove station connects with the Magdalen Islands system by a cable to Old Harry Head, 55 knots, and Bay St. Lawrence with St. Pauls Island by a cable of 20 knots. The latter is operated with telephones.

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GOVERNMENT TELEGRAPH SERVICE—Continued.

NORTH SYDNEY MEAT COVE SECTION—Concluded.

| No. | Stations. | Inter- mediate Distance. | Agents and Operators. | Salaries per Annum. | Date of Appointment. | Memo. |
|-----|---|--------------------------------|-----------------------|---------------------|-----------------------------|--|
| | <i>Requirers Sections—Con.</i> | Miles. | | \$ cts. | | |
| | Baddeck Loop Line..... | 36 | D. McAuley..... | 100 00 per annum... | Prior to June, 1910..... | |
| | Murray Loop Line..... | 20 | J. Smith..... | 60 00 " | " " | |
| | Englishtown—Big Bras d'Or..... | 14½ | H. Campbell..... | 60 00 " | " " | |
| | Big Bras d'Or—North Sydney..... | 12½ | Duncan McRae..... | 60 00 " | June 1, 1910. | |
| | <i>Money Point Branch.</i> | 177½ | | | | |
| 1 | Bay St. Lawrence..... | 0 | V. Theriault..... | Accommodation. | Dec. 10, 1907. | This line was established and is being operated by telephone in the interest of the Signal Service. |
| 2 | Bay St. Lawrence Bench..... | 1½ | J. O'Brien..... | " | " " | |
| 3 | Cape North Light (Money Point)..... | 5½ | Norman McLeod..... | " | " " | |
| 4 | Cape North, Fog Alarm (Money Point)..... | 1 | Stanley Hackett..... | " | June 1, 1909. | |
| | Total..... | 8 | | | | |

CAPE BRETON : NORTH SYDNEY, BOULARDERIE AND ESKASONI SECTIONS.

| | | | | | | |
|---|--|-----|---------------------------|-----------------------|--------------|--|
| <i>Bouladerie Line, North Sydney.</i> | | | | | | |
| 1 | Little Bras d'Or (M.C. poles) | 4½ | (See Meat Cove line) | 50 00 or commission.. | Dec. 1, 1906 | The commission is 25 p. c. of the Govt. line tolls in each instance and is guaranteed to amount to not less than \$50 per annum. |
| 2 | Alder Point (loop line) | 5 | Mrs. John Arseneault..... | " | " | |
| 3 | Groves Point (1 mi. M. C. poles)..... | 3 | Mrs. Mary Dunlop..... | 50 00 " | 1, 1906 | |
| 4 | Hillside..... | 4 | Mrs. Christina McKenzie.. | 50 00 " | Feb. 1, 1907 | |
| 5 | Bouladerie West..... | 4 | John McIntyre..... | 50 00 " | Jan. 1, 1907 | |
| 6 | S. S. Bouladerie..... | 3 | Donald McRae..... | 50 00 " | Dec. 1, 1906 | |
| 7 | Point Clear..... | 4 | Mrs. M. McLeod..... | 50 00 " | Dec. 1, 1906 | |
| 8 | Upper Knapp Head..... | 7 | Mrs. Murdoch McKenzie.. | 50 00 " | Oct. 6, 1904 | |
| 9 | Ross Ferry..... | 6½ | Robert Campbell..... | 50 00 " | 6, 1904 | |
| | Bouladerie Centre..... | 6 | Mrs. J. B. McKenzie..... | 50 00 " | " 6, 1904 | |
| | Big Bras d'Or..... | 7½ | (See Meat Cove line)..... | 50 00 " | " | |
| | Total miles of wire.. | 54½ | Pole line 51. | 450 00 | | |

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The commission is 25 p. c. of the Govt. line tolls in each instance and is guaranteed to amount to not less than \$50 per annum.

Previously in charge of Daniel McNeil.

| <i>Repairers Sections.</i> | | | | | | | |
|---|------|--|--------------------------|----------------|----------|--|---------------------------------|
| Alder Point Little Bras d'Or..... | 5 | Captain John Arsenault..... | 50 00 or commission..... | Jan. | 1, 1907 | | |
| Big Bras d'Or—Upper Kompt Head..... | 20 | J. A. C. McKenzie..... | 50 00 " " " " " " | " | 1, 1907 | | |
| Little Bras d'Or—Upper Kompt Head..... | 24 | M. McLeod..... | 50 00 " " " " " " | July | 12, 1909 | | |
| On Meat Cove poles..... | 54½ | Jos. Logue..... | (See below). | | | | |
| General repairer..... | | | | | | | |
| Total..... | 54½ | | 150 00 | | | | |
| <i>Ekusoni Line.</i> | | | | | | | |
| North Sydney French Vale (5½ on Gaharus poles)..... | 11 | John J. McLean..... | 50 00 or commission..... | March 25, 1907 | | | |
| Gillis Lake..... | 5 | Daniel H. Gillis..... | 50 00 " " " " " " | Feb. 28, 1907 | | | |
| East Bay..... | 4 | Miss M. L. McNeil..... | 50 00 " " " " " " | " | | | |
| North Side, East Bay..... | 5 | James J. Gillis..... | 50 00 " " " " " " | Jan. 15, 1907 | | | |
| Ekusoni..... | 5 | Miss Sadie McMillan..... | 50 00 " " " " " " | Dec. 6, 1907 | | | |
| Castle Bay..... | 6 | Miss Maria McDonald..... | 50 00 " " " " " " | Jan. 10, 1907 | | | |
| Benevadie Pond..... | 5 | J. N. McNeil..... | 50 00 " " " " " " | March 20, 1909 | | | |
| Benecadie..... | 5 | Hugh Farrell..... | 50 00 " " " " " " | " | 20, 1909 | | |
| Piper's Cove..... | 2 | M. D. McNeil..... | 50 00 " " " " " " | " | 20, 1909 | | |
| Grand Narrows..... | 4 | J. J. McNeil..... | 50 00 " " " " " " | May 1, 1910 | | | |
| Total miles of wire..... | 53 | Pole line 47½ | 500 00 | | | | |
| <i>Repairers Sections.</i> | | | | | | | |
| On Meat Cove poles..... | 54½ | A. G. McLean, McLeanville..... | \$50 00 per annum..... | June 1, 1907 | | | |
| From Meat Cove Line to Gillis Lake..... | 104½ | | | | | | |
| From Gillis Lake to Ekusoni (Castle Bay)..... | 21 | Duncan Gillis, North Side, East Bay..... | 50 00 " " " " " " | " | 1, 1907 | | |
| From Castle Bay to Grand Narrows..... | 16 | J. L. McDonald, Grand Narrows..... | 50 00 " " " " " " | June 10, 1909 | | | |
| Total..... | 53 | | 150 00 | | | | |
| <i>General Repairer.</i> | | | | | | | |
| Bonharderie line..... | 54½ | | | | | | |
| Ekusoni line..... | 53 | | | | | | |
| Gaharus line: North Sydney Lettche's Creek..... | 5½ | Jos. Logue, North Sydney..... | \$540 00 per annum..... | Jan. 1, 1906 | | | Horse hire allowed in addition. |
| Meat Cove line: North Sydney Big Bras d'Or..... | 15 | | | | | | |
| Total..... | 128½ | | | | | | |

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GOVERNMENT TELEGRAPH SERVICE—Continued.
BAY ST. LAWRENCE-HAWKESBURY SECTION.

| No. | Stations. | Inter- mediate Distance. | Agents and Operators. | Salaries per Annum. | Date of Appointment. | Memo. |
|-----|--|--------------------------------|----------------------------|-----------------------|-------------------------|--|
| | | Miles. | | \$ cts. | | |
| 1 | Bay St. Lawrence | 0 | (See North Sydney Line) .. | | Jan. 1, 1904. | The commission is 25 p.c. on all business to and from the office in each instance; said commission guaranteed to be not less than at the rate of \$50 per annum. |
| 2 | Meat Cove | 74 | " .. | | | |
| 3 | Capo St. Lawrence | 4 | " .. | | | |
| 4 | Pointe St. Lawrence | 14 | Mrs. C. Jamieson | 50 00 or commission | Sept. 1, 1907. | The commission is 25 p.c. on all business to and from the office in each instance; said commission guaranteed to be not less than at the rate of \$50 per annum. |
| 5 | Pointe Cove | 8 | " .. | | | |
| 6 | Pleasant Bay | 10 | Mrs. G. P. McIntosh | 50 00 | Aug. 3, 1905. | |
| 7 | Barren | 10 | " .. | | | Allowance 50 p.c. Receipts and cheques government line prior to May, 1910. |
| 8 | Cheticamp (Eastern Harbour) | 8 | Chas. J. Aucoin | 50 00 | Sept. 3, 1902. | |
| 9 | Grand Etang | 8 | G. Doucet | 120 00 without com'n. | Oct. 20, 1896. | |
| 10 | Margaree Harbour | 8 | A. B. C. McLean | 50 00 or commission | Sept. 10, 1908. | Allowance 50 p.c. Receipts and cheques for government line prior to May, 1910. |
| 11 | Margaree Forks | 10 | Sarah McDougall | 50 00 | Feb. 1, 1898. | |
| 12 | N.E. Margaree (loop wire) | 4 | Mrs. J. D. Ross | 50 00 | " 1, 1898. | |
| 13 | S.W. Margaree | 12 | D. D. McFarlane | 140 00 without com'n. | Aug. 1, 1908. | Allowance 50 p.c. Receipts and cheques for government line prior to May, 1910. |
| 14 | To loop | 8 | Miss Annie Smith | 50 00 or commission | Nov. 1, 1908. | |
| 15 | Strathmore (Willow Bank) | 3 | Miss C. McLean | 120 00 without com'n. | Apr. 1, 1897. | |
| 16 | Mabon | 9 | Mrs. M. McDonald | 50 00 or commission | July 1, 1903. | Allowance 50 p.c. Receipts and cheques for government line prior to May, 1910. |
| 17 | Port Hood | 10 | D. J. McFarlane | 50 00 | Nov. 1, 1907. | |
| 18 | Smith's Id. (on loop) 1 mile cable included | 34 | Miss F. L. Smith | 50 00 | " 8, 1907. | |
| 19 | Henry Id. (on loop) 1 1/2 miles cable included | 34 | Miss C. McLennan | 50 00 | July 1, 1904. | Allowance 50 p.c. Receipts and cheques for government line prior to May, 1910. |
| 20 | To Port Hood, 2 1/2 miles cable included | 6 3/4 | " .. | 50 00 | Nov. 1, 1903. | |
| 21 | Judique | 8 | E. McDonald | 50 00 | " 1, 1903. | |
| 22 | Craigsmish (Craigsmore) | 10 | Allan Cameron | 50 00 | " 1, 1903. | Allowance 50 p.c. Receipts and cheques for government line prior to May, 1910. |
| 23 | Port Hastings | 34 | Miss M. McFarlane | 120 00 without com'n. | " 1, 1903. | |
| 24 | Hawkesbury | 171 1/2 | Miss E. McDonald | 1,200 00 | " 1, 1903. | |
| | Total | | | | | |

Miles of wire, 164 1/2; miles of cable, 5; miles of pole line, 150.

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| <i>Wyeomagh Branch Line.</i> | | | | | | | | | |
|------------------------------|---------------------------|------|----------------------------|-----------------------|---------------|----------------|--|--|--|
| 1 | Strathorne (Willow Banks) | 0 | Mrs. Agnes McCormick | 50 00 or commission | Mar. 4, 1910. | | | | |
| 2 | McCormick (Loch Bau) | 24 | | " | " | | | | |
| 3 | West Lake | 6 | P. M. McInnes | 50 00 | " | 4, 1910. | | | |
| 4 | To main line | 23 | Matthew McDaniel | 50 00 | " | 4, 1910. | | | |
| | Break Village. | 6 | Daniel Ross | 50 00 | " | 4, 1910. | | | |
| | Wyeomagh. | 12½ | | | | | | | |
| | Total miles of wire..... | 324 | Pole line, 29½. | 200 00 | | | | | |
| <i>Repairers Sections.</i> | | | | | | | | | |
| <i>General</i> | | | | | | | | | |
| | Meat Cove—Inverness. | 104½ | A. A. Kennedy, Inverness. | 420 00 per annum..... | May 17, 1910. | | Horse hire allowed in addition to salary. | | |
| | Inverness—Hawkesbury. | 67½ | J. F. McMillan, Fort Hast- | " | " | 17, 1910. | " | | |
| | Wyeomagh Line. | 824 | ings | 420 00 | " | | " | | |
| | Local— | | | | | | | | |
| | Bay St. Lawrence—Meat | 74 | (See North Sydney Line). | | | | | | |
| | Cove..... | | | | | | | | |
| | Meat Cove—Half-way | 5½ | R. Fraser | 40 00 | " | May 20, 1903. | | | |
| | Shanty— | 5½ | E. Fraser | 30 00 | " | " 20, 1903. | | | |
| | Half-way Shanty—Pou- | | | | | | | | |
| | lets Cove | 5½ | | | | | | | |
| | Poulets Cove—Pleasant | 8 | K. Fraser. | 40 00 | " | " 20, 1903. | | | |
| | Bay | 10 | E. J. Timmons. | 40 00 | " | Mar. 16, 1909. | | | |
| | Pleasant Bay—Barren. | 10 | J. A. Chaisson. | 40 00 | " | July 1, 1905. | | | |
| | Barren—Cheticamp. | 8 | Joseph L. Chaisson | 40 00 | " | " 1, 1905. | | | |
| | Cheticamp—Grand | 8 | H. K. McLean. | 25 00 | " | " 1, 1905. | | | |
| | Etang | | | | | | | | |
| | Grand Etang—Margaree | | | | | | | | |
| | H..... | | | | | | | | |
| | Margaree H.—S.W. Mar- | 22 | Alex. McFarlane, sr. | 50 00 | " | " 4, 1902. | Allowance previously \$40, readjusted in January, 1910. | | |
| | garee and N.E. Mar- | | | | | | | | |
| | garee loop | 23 | J. D. McFarlane. | 40 00 | " | June 4, 1902. | | | |
| | S.W. Margaree—Strath- | 9 | L. G. McDougall | 40 00 | " | Nov. 3, 1902. | | | |
| | lorne | 20 | J. A. Campbell | 50 00 | " | " | | | |
| | Strathorne—Mabon | | | | | | | | |
| | Mabon and Judique. | | | | | | | | |
| | Judique & Port Hawkes- | 21½ | J. N. Melasse. | 50 00 | " | Aug. 1, 1904. | Of this section (see list) 5 miles is submarine cable, the | | |
| | bury | 13½ | Andrew Smith. | 20 00 | " | " 1, 1908. | land line portions covering but 4½ miles of 2 wire | | |
| | Pt. Head Islands | | | | | | line for the loop. | | |
| | Total | 171½ | | 1,345 00 | | | | | |

1 GEORGE V., A. 1911

GOVERNMENT TELEGRAPH SERVICE—Continued.
CAPE BRETON—HAWKESBURY-SCATARIE ISLAND SECTION.

| No. | Stations. | Inter- mediate Distance. | Agents and Operators. | Salaries per Annum. | Date of Appointment. | Memo. |
|-----|--|---------------------------------|--|---------------------------|-------------------------|---|
| | | Miles. | | \$ cts. | | |
| 1 | Hawkesbury .. River Bourgeois | 0 26 | (See Bay St. Lawrence line) M. E. Boyd .. | 50 00 or commission. | Nov. 1, 1903. | The commission is 25 p.c. of the Government line tolls, and is guaranteed to amount to not less than \$50 per annum. Where 50 p.c. commission is paid there is no guarantee as to amount. Main battery at St. Peters. |
| 2 | St. Peters | 6 | R. C. Morrison | 100 00 | " 1, 1903 | |
| 3 | Rockdale .. | 4 | D. B. Pettie .. | Commission (25 p.c.) only | " 1, 1904 | |
| 4 | To loop | 2 ³ / ₄ | | | | |
| 5 | Lower Lardoise (loop wire). | 7 | Mrs. E. Finlayson .. | 50 00 or commission. | May 11, 1910. | |
| 6 | Grand River .. | 7 | Miss E. A. Finlayson .. | 50 00 | June 1, 1903. | |
| 7 | St. Esprit (Laframbois Intervale). | 13 | Mrs. J. D. Morrison .. | 50 00 | Sept. 1, 1906. | |
| 8 | Fourchu (Fourchu) .. | 13 | John McKinnon .. | 50 00 | June 22, 1910. | |
| 9 | To loop | 16 | | | | |
| 10 | Gabarus (loop wire) .. | 3 | Miss C. Grant .. | 350 00 without comm'n | Jan. 16, 1904. | |
| 11 | Louisburg .. | 11 | Wesley Townsend .. | 50 00 or commission. | Feb. 1, 1904 | |
| 12 | Big Lorraine .. | 3 | Fraser Wilcox .. | Accommodation office. | June 1, 1910. | |
| 13 | Mam-a-Dieu .. | 10 | Miss H. Dickson .. | 100 00 or commission. | Oct. 1, 1910. | |
| 14 | To landing .. | 1 | | | | |
| 15 | Scatarie Island West (cable) | 3 ¹ / ₂ | E. E. Pope | 50 00 | Aug. 15, 1904. | Repeating office. Automatic repeaters for North Sydney line. |
| 16 | Scatarie Island East. | 7 ¹ / ₂ | J. T. Mared | 50 00 | " 1, 1904. | |
| | Total | 123 ¹ / ₂ | | 960 00 | | Main battery at Main a Dieu. |

Miles of wire, 123¹/₂; miles of cable, 3¹/₂; miles of pole line, 121¹/₂.

| | |
|-------------------------------------|-------------------------------|
| <i>Grand River—Gabarus Line</i> | |
| Grand River | 0 |
| To loop | 7 |
| Grand River Falls (loop wire) .. | 3 |
| Loch Lomond. | 5 ¹ / ₂ |
| From | 4 |

| | |
|---------------------------|----------------------|
| (See Hawkesbury line). | |
| Mrs. E. D. McKillop | 50 00 or commission. |
| Mrs. J. McK. Fraser | 50 00 |
| Miss E. McDonald | 50 00 |
| | Dec. 20, 1907. |
| | " 14, 1907. |
| | May 13, 1908. |

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| | | | | | | |
|---|---------|-----------------------------|---|---------------------|--|--|
| Salmon River Victoria Bridge..... | 16 8 | (See Hawkesbury line). | | | | |
| Gabarus (North Sydney line poles, 2½ miles). | 5 | | | | | |
| Total..... | 48½ | Pole line, 44½. | | 150 00 | | |
| <i>N. Sydney-Gabarus Line.</i> | | | | | | |
| North Sydney..... | 0 | See Meat Cove line..... | | | | |
| 1 Ball's Creek..... | 9 | D. A. McCormick..... | Commission (25 p.c.) only June 1, 1910. | | | |
| 2 Marion Bridge..... | 17½ | Mrs. John E. Morrison..... | " " " 1, 1910. | | | |
| 3 Gabarus (Hawkesbury pole line, 3 miles). | 12 | (See Hawkesbury line). | | 50 00 or commission | | |
| Total..... | 38½ | Pole line, 35½. | | 50 00 | | |
| <i>Repairs Sections.</i> | | | | | | |
| Local— | | | | | | |
| Grand River to Enon.... | 19½ | H. Uregulaert, Grand River | June 10, 1909. | 50 00 per annum. | | |
| Grand River to Fourchu.. | 26 | D. McKillop, Grand River | " " 10, 1909. | 50 00 | | |
| General— | | | | | | |
| Hawkesbury to Gabarus.. | 89½ | G. E. Bissett, St. Peters.. | Aug. 1, 1904. | 420 00 | | |
| Gabarus to N. Sydney.... | 38½ | | | | | |
| Gabarus to Satarie Id. E.. | 33½ | F. M. Dickson, Louisburg.. | " " 1, 1907 | 540 00 | | |
| Gabarus to Enon..... | 29 | | | | | |

This line between North Sydney and Gabarus, without any intermediate offices prior to June, 1910, has been in operation since December 11, 1903.

Horse hire allowed in addition since December 1, 1909.

Horse hire allowed in addition.

1 GEORGE V., A. 1911

GOVERNMENT TELEGRAPH SERVICE—Continued.
CHATHAM-ESCUMINAC, N.E., TELEGRAPH SYSTEM.

| No. | Stations. | Inter- mediate Distance. | Agents and Operators. | Salaries per annum. | Date of Appointment. | Memo. |
|-----|----------------------------|--------------------------------|---|----------------------|-------------------------|---|
| | | Miles. | | \$ cts. | | |
| 1 | Chatham..... | 0 | Great Northwestern Telegraph Co..... | 185 00 | | This amount is paid for supervision of the line and office accommodation at Chatham. The commission is 25 p.c. of the Government line tariff receipts in each instance, and is guaranteed to amount to not less than \$50 per annum. \$12 per annum allowed for care of main battery at Point Escuminac. |
| 2 | Black Brook..... | 5½ | M. McDougall..... | 50 00 or commission. | July 1, 1904..... | |
| 3 | Baie du Vin..... | 15 | M. A. Williston..... | 50 00 " | Aug. 1, 1891..... | |
| 4 | Lower Hardwicke..... | 6 | Mrs. M. Bennett..... | 50 00 " | Sept. 1, 1885..... | |
| 5 | Escuminac..... | 32 | D. Lewis..... | 50 00 " | Nov. 1, 1893..... | |
| 6 | Point Escuminac lighthouse | 12 | K. R. McLeannan..... | 50 00 " | ..... |  |
| | Totals..... | 42½ | | 435 00 | | |

NOVA SCOTIA TELEGRAPH SYSTEM.

CAPE SABLE SECTION.

| | | | | | | |
|---|--|-----|-------|-------|-------|--|
| 1 | Barrington..... | 0 | ..... | ..... | ..... | This line has been leased to the Barrington Telephone Company from August 12, 1897. The lease is terminable at any time. |
| 2 | Newellton (including 1½ knots cable)..... | 11 | ..... | ..... | ..... |  |
| 3 | Cape Sable Island light- house (including 4 mile cable)..... | 62 | ..... | ..... | ..... |  |
| | Totals..... | 173 | | | | |

EAST COAST SECTION.

N. E.—In connection with the Signal Service a land line, 298 miles in length, was erected in 1881, between Canoe and Halifax, for a bonus of \$16,000, and is maintained and operated by the Western Union Telegraph Company, without further cost to the Government.

SESSIONAL PAPER No. 19

BAY OF FUNDY, N.B. TELEGRAPH SYSTEM.
GRAND MANAN SECTION.

| No. | Stations. | Inter- mediate Distance. | Agents and Operators. | Salaries per annum. | Date of Appointment. | Memo. |
|-----|--|--------------------------------|--------------------------------|----------------------|-------------------------|---|
| | | Miles. | | \$ cts. | | |
| 1 | Long Eddy Cable Hut to— Flaggs Cove. | 3 | Mrs. C. C. Seely | 540 00 | Nov. 18, 1880 | The commission is 25 p. c. on all Government line business to and from the office and commission guaranteed not to be less than at the rate of \$50 per annum. When 50 p. c. commission is paid there is no guarantee as to amount. |
| 2 | " | 23 | J. R. Parker. | 240 00 | April, 1910. | |
| 3 | Caetalia | 23 | A. Gilmore (repairer). | 60 00 | Dec. 1, 1884 | |
| 4 | Woodwards Cove. | 35 | Geo. E. Dalzell. | 25 p. c. commission. | June 1, 1898. | |
| 5 | Grand Harbour | 2 | M. A. Fraser | 50 p. c. | Feb. 28, 1893. | |
| 6 | Seal Cove. | 43 | J. L. Newton | 75 00 or | April 1, 1887. | |
| 7 | " | 4 | J. A. Ingersoll. | 50 00 | Sept. 22, 1899 | |
| 8 | Deep Cove. | 2 | Mrs. Robert Fraser | 25 00 | Aug. 1, 1907 | |
| | Southern Head | 34 | O. McLaughlin. | 25 p. c. | April, 1887 | \$25 00 per annum included for repeating White Head Branch. |
| | Branch Line | | C. Ingersoll. | 25 p. c. | April 22, 1897 | |
| 9 | Grand Harbour— Cheney's Island 3 knot cable. | 43 | S. E. Russell | 25 p. c. | Feb. 1, 1891 | Southern Head office is now operated by telephone from Seal Cove. |
| 10 | White Head Island 3 knot cable. Long Eddy to Herring Cove. | 13 | Mrs. W. Cossaboon. | 50 00 or | Feb. 1, 1903 | |
| 11 | Herring Cove Cable Hut to Welch Pool. | 10 | | | | |
| | Cable across channel | 43 | E. J. Mitchell | 210 00 and | May 1, 1905 | Employed occasionally. |
| | | 13 | Wellington Parker (lineman) | 2 00 per day | | |
| 12 | Eastport, Maine, U.S.A. | 3 | George H. Cushing | 200 00 | Dec. 26, 1881 | |
| | Totals | 443 | | 1,450 00 | | |

1 GEORGE V., A. 1911

GOVERNMENT TELEGRAPH SERVICE—Continued.
CHICOUTIMI AND NORTH OF ST. LAWRENCE TELEGRAPH SYSTEM.
CHICOUTIMI—TADOUSSAC SECTION.

| No. | Stations. | Inter- mediate Distance. | Agents and Operators. | Salaries per Annum. \$ cts. | Date of Appointment. | Memo. |
|-----|------------------------|--------------------------------|---|--|---|----------------------|
| 1 | Chicoutimi. | 0 | J. C. Tache, Dist. Supt. J. D. Villeneuve, Insp'r. J. A. Couet, clerk. T. Villeneuve, operator. J. P. Rivard. J. Dubé, messenger. M. Desbiens, cleaner. J. Fortin, repairer. Miss A. Gauthier, op. F. E. Guathier, repairer. Rev. G. H. Gagnon, oper. J. S. Gagnon, operator. J. Brisson, repairer. Aug. Villeneuve, operator. E. Stinard, operator. Mrs. P. Hervieux, operator. Miss L. Maltais. H. Gravel, repairer. Eugene Caron, agent. | 300 00 660 00 180 00 540 00 480 00 120 00 72 00 420 00 50 00 350 00 50 00 360 00 50 00 50 00 50 00 50 00 50 00 360 00 | Jan. 1, 1905 April 1, 1906 " 1, 1906 " 1, 1907 " 1, 1909 Aug. 1, 1909 Sept. 1, 1906 Aug. 1, 1897 June 1, 1909 Feb. 1, 1904 Jan. 1, 1904 April 1, 1906 June 1, 1906 April 1, 1906 Aug. 1, 1909 April 1, 1906 " 1, 1906 June 1, 1906 | |
| 2 | Ste. Anne. | 2½ | | | | |
| 3 | Ste. Fulgence. | 8 | | | | |
| 4 | Laurent. | 8 | | | | |
| 5 | Descente des Femmes. | 9 | | | | |
| 6 | Ste. Marguerite Depot. | 34 | | | | |
| 7 | Ste. Marguerite. | 2 | | | | |
| 8 | Sacré Cœur. | 8 | | | | |
| 9 | Tadoussac. | 12½ | | | | See North Shore line |
| | | 84 | | 4,192 00 | | |

CHICOUTIMI—PERIBONKA SECTION.

| No. | Stations. | Inter- mediate Distance. | Agents and Operators. | Salaries per Annum. \$ cts. | Date of Appointment. | Memo. |
|-----|----------------------------|--------------------------------|---------------------------|--------------------------------|----------------------------|-------|
| 1 | Chicoutimi. | 0 | (See above). | | | |
| 2 | Ste. Anne. | 2½ | " " | | | |
| 3 | To loop. | 5½ | J. Murdoch, operator. | 50 00 | Nov. 1, 1903 | |
| 4 | Shipshaw North, loop wire. | 4 | Miss M. Dufour, operator. | 50 00 | 1, 1907 | |
| 5 | Shipshaw. | 1 | " " | 50 00 | Sept. 1, 1903 | |
| 6 | St. Leonard. | 4 | Géo. Gagnon. | 50 00 | | |
| 7 | To loop. | 2 | " " | 50 00 | | |
| 8 | St. Ambrose loop wire. | 4½ | A. Simard, operator. | 50 00 | June 1, 1905 | |
| 9 | St. Charles Borromeo. | 4½ | B. Bouchard, " | 50 00 | Sept. 1, 1903 | |
| 10 | Tache. | 7 | Jean Fradette, " | 50 00 | Jan. 1, 1908 | |
| 11 | To loop. | 4½ | " " | 50 00 | | |

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| | | (Elie Gagne, ") { Gedson Verreault, rep. Alf. Rousseau, operator Hypolite Boivin, " " Charles Landry, " " Mrs. E. Niquette, " " | 50 00 360 00 50 00 50 00 50 00 50 00 | " Mar. Jan. " " " " " " | 1, 1908 1, 1909 1, 1908 1, 1908 1, 1909 1, 1909 |
|--------------------------------|-----|--|---|--|--|
| 9 St. Joseph d'Alma, loop wire | 6 | | | | |
| 10 St. Gour de Marie | 6 | | | | |
| 1 La Pipe | 6½ | | | | |
| 2 Bonflour | 8 | | | | |
| 3 Peribonka | 9 | | | | |
| | 78½ | | | | |
| | | | 910 00 | | |

CHICOUTIMI-LAC CLAIR SECTION.

| | | (See above). " " Thos. Simard A. Dufour L. Boulanne | 50 00 50 00 50 00 | Nov. " " " | 1, 1905 1, 1904 1, 1905 |
|---------------|-----|---|-------------------------|------------------|-------------------------------|
| 1 Chicoutimi | 0 | | | | |
| 2 Ste. Anne | 2½ | | | | |
| 3 Range 6 | 3 | | | | |
| 4 Lac Charles | 3 | | | | |
| 5 Lac Clair | 4 | | | | |
| | 12¾ | | | | |
| | | | 150 00 | | |

MURRAY BAY-BAY ST. PAUL SECTION.

| | | Mrs. F. Vincent Jos. Dempsles, operator Jos. Goudreau, " " A. Bergeron, " " J. A. Boivin, M. Fortin, repairer F. Boivin, agent | 50 00 50 00 50 00 50 00 | May May March Sept. | 1, 1907 1, 1905 1, 1905 1, 1909 |
|----------------|-----|--|----------------------------------|------------------------------|--|
| 1 Murray Bay | 0 | | | | |
| 2 Quay | 5½ | | | | |
| 3 St. Agnes | 4½ | | | | |
| 4 St. Hilariem | 5 | | | | |
| 5 St. Ubalin | 8½ | | | | |
| 6 Bay St. Paul | 9 | | | | |
| | 32¾ | | | | |
| | | | 150 00 | | |

BAY ST. PAUL-PETITE RIVIERE BRANCH.

| | | F. Boivin L. S. Bouchard, " " | 50 00 50 00 | Dec. | 1, 1903 |
|---------------------------------|----|-------------------------------------|----------------|------|---------|
| 1 Bay St. Paul | 0 | | | | |
| 2 Petite Riviere (St. Francois) | 13 | | | | |
| | 13 | | | | |

BAY ST. PAUL-ST. PLACIDE BRANCH.

| | | F. Boivin D. Simard | 50 00 50 00 | May | 1, 1909 |
|----------------|----|------------------------|----------------|-----|---------|
| 1 Bay St. Paul | 0 | | | | |
| 2 St. Placide | 8½ | | | | |
| | 8½ | | | | |

See North Shore section.

See Chicoutimi section.

" " "

" " "

See Bay St. Paul, Chicoutimi section.
Payment at Bay St. Paul \$25 a yr., and \$12 for battery
care for operation of this branch to Petite Riviere.

See Bay St. Paul, Chicoutimi section.

1 GEORGE V., A. 1911

GOVERNMENT TELEGRAPH SERVICE—Continued.
CHICOUTIMI AND NORTH SHORE OF ST. LAWRENCE TELEGRAPH SYSTEM—Continued.
North Shore (East of Bersimis).—Continued.

| No. | Stations. | Inter- mediate Distance. | Agents and Operators. | Salaries per Annum. | Date of Appointment. | Means. |
|-----|----------------------|--------------------------------|--|-------------------------|-------------------------|--|
| | | Miles. | | \$ cts. | | |
| 9 | Trinity Bay East. | 2½ | A. Bilodeau | 25 p.c. commission | May 1, 1889. | |
| 10 | Caribou Island | 7 | Mrs. E. Chouinard | 25 | Oct. 19, 1905. | |
| 11 | Pegg Island Light | 8½ | Paul Côté. | Accommodation. | Jan. 10, 1895. | No commission paid. |
| 12 | Pont aux Anglais | 2 | Ludger Pelletier | " | " | " |
| 13 | Pontecôt. | 6½ | P. Molloy | " | Sept. 17, 1905. | " |
| 14 | May Islands | 9 | Mrs. P. Fournier. | 310 00 per annum | Jan. 1, 1899 | |
| 15 | Ste. Marguerite | 38½ | A. Thériault. | 25 p.c. commission | July 1, 1888 | |
| 16 | Clark City | 5 | North Shore Power, Rail- way and Navigation Co. | 180 00 per annum | April 17, 1903. | |
| 17 | Seven Islands | 17½ | P. E. Vigneault, agent. | 25 p.c. commission | Jan. 2, 1884. | |
| 18 | Mojie West | 14½ | F. Gallienne, repairer. | 180 00 and 25 p.c. com. | Jan. 2, 1884. | Plus 50 cents per day when absent on duty. |
| 19 | Moisie East. | 1 | Mrs. Cléme, operator | 540 00. | Nov. 5, 1906. | |
| 20 | Pigeon | 28 | Holliday Bros. | 50 00 or commission. | June 1, 1906. | In operation during fishing season. |
| 21 | Rivière aux Graines. | 29 | Peter Wright, repairer | 112 00. | Oct. 1, 1902 | |
| 22 | Sheldrake. | 15 | Mrs. P. Wright, operator | 100 00 or commission. | " 7, 1909. | |
| 23 | Thunder River | 6½ | Mrs. E. Girard | " | Dec. 1, 1904 | |
| 24 | Magpie. | 14 | Mrs. A. Girard | 50 00 | Feb. 1, 1890 | |
| 25 | St. John River | 9 | Mrs. H. Cady | " | Sept. 17, 1905. | \$12 per month for care of main battery. |
| | | | Geo. Poirier | 50 00 | Oct. 1, 1899. | |
| | | | Ben Chambers | " | Nov. 1, 1891. | |
| | | | E. H. Tétu, Dist. Supt. | 1,080 00. | " | |
| 26 | Long Point | 10 | Mrs. E. H. Tétu, operator. | 300 00. | Sept. 1, 1903 | Repeating office for Anticosti cable in operation since Sept. 1, 1891. |
| | | | A. Fournier, agent | 500 00. | Sept. 1, 1906. | |
| 27 | Mingan | 7 | Mrs. A. Fournier, asst. op. | 180 00. | " 11, 1906 | |
| 28 | Point Esquimaux | 24 | Mrs. C. Maloney, operator. | 100 00 or commission. | Sept. 1, 1897. | Salary increased to \$100 per annum, March 31, 1907. |
| 29 | Betchouanes | 20 | Mrs. E. Cyr, operator | 240 00. | Nov. 2, 1902 | Plus 50 cents per day when absent on duty. |
| | | | E. Cyr, repairer | 500 00. | July 15, 1904 | |
| 30 | Piastre Bay | 23 | Jos. Picard, opr. and rep. | 212 00. | Sept. 18, 1902 | |
| | | | Mrs. J. Boetz, operator. | 100 00. | " 1, 1903. | |
| 31 | Watahou. | 15 | S. Tanguay, repairer. | 112 00. | Dec. 1, 1903. | |
| | | | Mrs. Cl. Bourque, operator. | 100 00. | " 1, 1903. | |
| 32 | Aganau. | 21½ | John Bourque, repairer. | 112 00. | Sept. 3, 1902 | |
| | | | Mrs. Galant, operator | 112 00. | " 3, 1902 | |
| | | | S. Galant, repairer | 112 00. | " 5, 1905. | |
| 33 | Nataashquan | 21 | Mrs. Vignault, operator | 100 00. | " 5, 1905. | |
| | | | C. Vignault, repairer | 112 00. | " 5, 1902 | |

GOVERNMENT TELEGRAPH SERVICE.—Continued.

LINE REPAIRERS, SECTIONS AND MILEAGE—MURRAY BAY TO CHATEAU BAY.

| | Mileage. |
|--|--|
| A. Brassard, repairer..... | Murray Bay to Baie des Rochers..... 33 |
| G. Bouthanne "..... | Baie des Rochers to Bergeronnes..... 34½ |
| "..... | St. Catherine's Bay to St. Etienne branch line..... 17 |
| Ed. Courbron "..... | Bergeronnes to Rivière Colombie (16 miles east of Berstems). 67½ |
| Jos. Gagnon "..... | Rivière Colombie to West Crossing Rivière aux Outardes (24 miles east of Berstems). 40 |
| David Malouin "..... | East Crossing of Rivière aux Outardes to English Bay (7 miles east of Manitouagan). 41 |
| Wm. Montreuil "..... | English Bay to St. Nicholas Harbour (14 miles west of Godbout). 27 |
| N. A. Comeau "..... | St. Nicholas Harbour to Pointe des Monts..... 32½ |
| Francis Gallienne, general repairer..... | Pointe des Monts to Thunder River..... 196½ |
| Ed. Cyr "..... | Thunder River to Kegaska..... 197½ |
| J. L. Osborne "..... | Kegaska to St. Augustine..... 292 |
| P. C. Vignault "..... | St. Augustine to Chateau Bay..... 199 |
| | 1,073½ |

GROSSE ISLE QUARANTINE TELEGRAPH SYSTEM.

| No. | Stations. | Inter- mediate Distances. | Agents and Operators. | Salaries per Annum. | Date of Appointment. | Memo. |
|-----|--|---------------------------------|---------------------------------------|---------------------------------------|-------------------------|---|
| | | Miles. | | \$ cts. | | |
| 1 | Quebec..... | 0 | Great Northwestern Tele- graph Co. | 185 00 | | This amount is paid for supervision of the line, and covers rent of pole line from Québec to L'Ange Gardien, for which \$35 per annum is charged. |
| 2 | L'Ange Gardien..... Orléans Island (cable)..... St. Pierre..... | 13 4½ | Marie Turcotte..... | 50 00 or commission..... | Mar. 1, 1885. | |
| 3 | St. Petronille..... | 34 | Deaneiges Plante..... | 50 00 | Oct. 1, 1886. | |
| 4 | St. Laurent..... | 6½ | M. Gobeil..... | 120 00 and 25 per cent commission. | Sept. 15, 1888. | |
| 5 | St. Jean..... | 7 | P. Pouliot, dist. supt..... | 1,120 00 and 25 per cent (commission) | Nov. 1, 1907. | This commission is 25 p. c. of the Government line tariff in each instance, and guaranteed to amount to not less than \$50 per annum. |
| 6 | St. François..... | 6½ | Helene Langelin..... | 50 00 or commission..... | Oct. 1, 1907. | For local agency. Dist. Supt. and repairer. |
| 7 | Isle Réaux (including 2 knots cable). | 34 | | | | |
| 8 | Isle Réaux (land line)..... Grosse Isle-quarantine office (including 2 knots cable). | 2½ 3½ | Miss Julia Legace..... | 100 00 and 25 per cent commission. | June 1, 1906. | \$5 per month for messenger serv. in summer, and \$12 p. annum allowed for care of main batt. at Gr. Isle. |

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| | | | | | |
|--|-----|------------------|----------------------|---------------|---|
| Quarantine telephone system, 2 wire line. | 1½ | | | | |
| Grosse Isle to Crane Island (including 3 knots cable). | 85 | N. Lachance. | 50 00 or commission. | Nov. 1, 1907. | Note.—The telephone system on Grosse Isle since May, 1903, has comprised 1½ miles of 2 wire line with 11 connections or stations. |
| Crane Island to Montmagny (cable). | 5 | | | | |
| Loop Line (2 wires). | | | | | Connection with the Bell Telephone System at Montmagny. |
| St. François St. François-Nord. | 5 | Md. Irene Labbe. | 50 00 or commission. | July 1, 1907. | |
| St. Jean—St. Famille. | 5½ | P. Léonard. | 50 00 " | April 2, 1904 | |
| | 76½ | | 1,825 00 | | |

Note.—In addition to the above, there is included in the Quarantine Dist. Supply the undermentioned lines:—

| | | | | | |
|----------------------------|----|--|--|--|--|
| <i>Telephone Lines.</i> | | | | | |
| Les Éboulements. | 0 | | | | Leased to the Charlevoix and Saguenay Telephone Co. |
| Isle aux Cordiers (cable). | 3 | | | | |
| On Isle aux Cordiers. | 10 | | | | Connection at Beauport with the Bell Telephone System. |
| Beauport. | 0 | | | | |
| Laval. | 15 | | | | |
| Total. | 28 | | | | |

BEAUPORT LAVAL TELEPHONE LINE.

| | | | | | |
|-------------------|----|-----------------|-----------------------|--------------|--|
| 1 Beauport. | 0 | J. Bélanger. | 25 p. c. commission.* | Feb. 1, 1910 | Special allowance of \$50 per year for general agency at Beauport. |
| 2 Valhere's Mill. | 7½ | A. Valhere. | 25 p. c. " | " 1, 1910 | |
| 3 Laval. | 7½ | Rev. P. Giroux. | Accommodation. | " 1, 1910 | *Commission is on Government line tolls only, and at Laval is guaranteed at the rate of \$50 per year. |
| 4 " | | Mme Touchette. | 25 p. c. commission. | " 1, 1910 | |
| Total. | 15 | | | | |

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GOVERNMENT TELEGRAPH SERVICE—*Continued.*

BEAUPORT-LAVAL TELEPHONE LINE.

This line is under an agreement, operated in conjunction with the Bell Telephone Co.; and is directly connected with the Central Exchange at Quebec. The tariff for conversations and messages is as hereunder:—

BEAUPORT-LAVAL TELEPHONE LINE—TARIFF.

Local business between Beauport and Laval or intermediate points aside from the Telephone Exchange at Beauport, 10 cents for 3 minutes conversation and proportionate charge for any period in excess of 3 minutes, or for messages, 10 cents for 20 words and 3 cents for each additional 5 words or fraction thereof.

Exchange business between Quebec or Beauport and Laval or intermediate points for connections through the exchanges: 15 cents for 3 minutes conversation and proportionate charge for any period in excess of 3 minutes, or for messages, 15 cents for 20 words and 5 cents for each additional 5 words or fraction thereof.

Through business with points on the Bell Telephone Company's lines beyond Quebec, the above rate of 15 cents, &c., to be added to the company's established rates beyond Quebec.

GOVERNMENT TELEGRAPH SERVICE—Continued.
ONTARIO—PELEE ISLAND TELEGRAPH SERVICE.

| No. | Stations. | Inter- mediate Distances. | Agents and Operators. | Salaries per Annum. | Date of Appointment. | Memo. |
|-----|---|---------------------------------|------------------------------|-----------------------|--------------------------------|------------------------------|
| | | Miles. | | \$ cts. | | |
| 1 | District Supt.'s House, (Leamington office.) | 0 | J. McR. Selkirk, Dist. Supt. | 50 00 per annum | Nov. 1, 1888 | Private Instrument. |
| 2 | " " | 24 | To cable landing (Mainland) | Commission 20 p.c. | Nov. 1, 1888 | Near Leamington Dock. |
| | (Mainland to Pelve Island) | 17½ | (Island) | | | Near Scudder Dock. |
| 3 | North Dock. | 0 | C. B. Quick | | (Nov. 1, 1888 Aug. 1, 1901) | |
| 4 | North Point Lighthouse. | 3 | J. R. Ledwell. | Commission 25 p.c. | Nov. 1, 1881 | |
| 5 | McCormick's store (31) | 3 | J. F. McCormick. | " | June 1, 1889 | |
| 6 | Ouellette's. | 1½ | A. Ouellette. | " | Oct. 28, 1890 | |
| 7 | W. J. McCormick. | | W. J. McCormick | Private Instrument. | June 19, 1898 | |
| 8 | Dr. H. O. Van Epp. | | Dr. H. O. Van Epp. | Accommodation office. | April 9, 1909 | Formerly Dr. H. O. Van Epp. |
| 9 | Holed, Station 32. | 2½ | Mrs. R. Little | Commission 25 p.c. | April 9, 1909 | |
| 10 | West Dock. | | A. M. McCormick | " | Nov. 1, 1888 | |
| 11 | Stagley. | 3 | Jas. Stagley | " | Nov. 12, 1908 | |
| 12 | Pelve South. | 2 | R. E. McCormick. | " | Aug. 1, 1904 | |
| 13 | Barris House, Leamington | 27 | A. Baird. | " | Nov. 2, 1904 | |
| 14 | Jackson & Maes. | 5 | Jackson & Maes. | " | Mar. 25, 1910. | |
| 15 | Barris House, P. Pelce. | 2½ | A. W. Baird | Accommodation office. | June 23, 1909 | Near Old Club House Station. |
| 16 | Tillevus. | 2½ | W. Tilden. | Commission 25 p.c. | April 29, 1905. | |
| 17 | Point Pelce. | 2½ | W. A. Grubb. | " | Nov. 1, 1888 | |
| | | 45½ | | 50 00 | | |

1 GEORGE V., A. 1911

GOVERNMENT TELEGRAPH SERVICE—Continued.

NORTHWEST LINES.

QU'APPELLE—EDMONTON SECTION.

| No. | Stations. | Inter- mediate Distance. | Agents and Operators. | Salaries per annum. | Date of Appointment. | Remarks. |
|-------------|---------------------------------|--------------------------------|--------------------------------|---------------------|-------------------------|---|
| | | Miles. | | \$ cts. | | |
| 1 | Qu'Appelle..... | 0 | C. P. R. Co..... | 420 00 | Dec. 1, 1896 | Agent operator joint with C. P. R. |
| 2 | Fort Qu'Appelle..... | 17 | P. R. Elmer..... | 720 00 | Aug. 15, 1906 | Lineman Wilson, died Nov. 1906. |
| 3 | "..... | " | D. Sutherland, lineman. | 640 00 | Dec. 1, 1909 | Agent at Lipton joint with C. P. R. |
| 4 | Lipton (loop wire)..... | 11 | C. P. R. Co..... | Commission 10 p.c. | May 1, 1906 | Townwood office closed. |
| 5 | Kitawia..... | 46 | A. VanLindeloogh..... | 720 00 | Nov. 1, 1883 | |
| 6 | South Humboldt..... | 78 | H. J. Macdonald..... | 720 00 | Feb. 1, 1904 | |
| 7 | Saskatoon..... | 69 | C. P. R. Co..... | 240 00 | Jan. 1, 1892 | Agent joint with C. P. R. |
| 8 | "..... | " | G. T. Clement, lineman. | 640 00 | Oct. 16, 1903 | |
| 9 | Waman..... | 14 | C. N. R..... | Commission 10 p.c. | Nov. 23, 1905 | |
| 10 | Honrietta..... | 38 | W. J. Salisbury..... | 720 00 | Oct. 1, 1886 | |
| 11 | Battleford..... | 47 | J. D. Noel..... | 720 00 | " 1, 1900 | |
| 12 | "..... | " | J. T. Dewan, lineman. | 640 00 | Nov. 1, 1909 | W. Dewan, resigned Nov. 1, 1909. |
| 13 | Bresaylor..... | 27 | J. T. Callahan..... | 720 00 | Dec. 1, 1900 | At Old Fort Pitt. |
| 14 | To loop..... | 63 | "..... | " | " | Transferred from Onion Lake, July, 1909. |
| 15 | Lloydminster..... | 29 | A. Bowtell..... | 720 00 | Dec. 1, 1907 | Transferred from Moose, May, 1909. |
| 16 | "..... | 20 | G. G. Mann..... | 720 00 | Aug. 1, 1902 | |
| 17 | To main line..... | " | "..... | " | " | |
| 18 | Onion Lake..... | 13 | H. McCloughan..... | 720 00 | Aug. 1, 1892 | Transferred from Lloydminster, July, 1909. |
| 19 | Moose..... | 35 | J. A. McCartney..... | 720 00 | June 1, 1909 | G. G. Mann, transferred to Lloydminster. |
| 20 | St. Paul des Metis..... | 35 | J. A. Gagnon (act. agent)..... | 640 00 | May 1, 1909 | C. Boulenc, resigned April 30, 1909. |
| 21 | Saddle Lake..... | 18 | J. W. Carroll..... | 720 00 | Sept. 1, 1900 | Phone line to Industrial School 6½ miles. |
| 22 | Pakan (Victoria)..... | 37 | R. Gordon..... | 680 00 | Feb. 1, 1905 | |
| 23 | "..... | " | B. Carey..... | 600 00 | Mar. 15, 1906 | |
| 24 | Andrew (loop wire 9 miles)..... | 10 | C. Norn..... | 600 00 | " 1, 1906 | |
| 25 | *Whitford..... | 7 | " (Postmaster)..... | Commission | July 1, 1905 | * Branch line Andrew to Whitford 7 miles operated by telephone. |
| 26 | Star..... | 18 | K. A. Morrison..... | 600 00 | Aug. 2, 1904 | |
| 27 | Fort Saskatchewan..... | 25 | A. W. M. Campbell..... | 720 00 | Dec. 1, 1898 | Salary increased in July, 1909. |
| 28 | "..... | " | Geo. Wilder..... | 940 00 | Nov. 1, 1909 | |
| 29 | "..... | " | T. Boole, messenger..... | 240 00 | Aug. 1, 1908 | |
| 30 | "..... | " | H. Hunt, act. lineman..... | 720 00 | Oct. 1, 1905 | Transferred from Qu'Appelle. |
| 31 | Edmonton..... | 18 | R. C. Macdonald, Supt..... | 1,900 00 | June 1, 1905 | Salary increased to \$1,900, April, 1909. |
| 32 | "..... | " | J. S. Macdonald, G. Ins..... | 2,000 00 | " | |
| Totals..... | | | | 19,920 00 | | |

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| <i>Peace River Line.</i> | | (Preceding table) | Commission 25 p.c. | Jan. 1, 1910. Oct. 1, 1904. Nov. 6, 1906. Mar. 1, 1910. | C. Egge, resigned. Until recently located at Edmonton. |
|--------------------------------|-----|----------------------------|--------------------|--|--|
| | | | | | |
| Edmonton | 0 | Jesse Egge | 600 00 | Jan. 1, 1910. | C. Egge, resigned. Until recently located at Edmonton. |
| 1 Halfway Lake, | 49 | Jas. McKernan | 500 00 | Oct. 1, 1904. | |
| 2 Athabasca Landing, | 49 | G. E. MacLeod, c. line-man | 720 00 | Nov. 6, 1906. | |
| 3 Mirror Landing, | 70 | Miss M. MacLeod, agent | 720 00 | Mar. 1, 1910. | |
| Totals | 168 | | 2,220 00 | | |
| <i>Wood Mountain Line.</i> | | (Preceding table) | Commission 25 p.c. | Dec. 1, 1891. Feb. 1, 1906. Dec. 1, 1908. " 1, 1890. Nov. 1, 1905. March 1, 1910. Oct. 15, 1904. | Agent joint with C. P. R. |
| | | | | | |
| 1 Moosejaw | 0 | C. P. R. Co. | 240 00 | Dec. 1, 1891. | Agent joint with C. P. R. |
| 2 Limerick | 60 | H. Sikos, lat'y man | 120 00 | Feb. 1, 1906. | |
| 3 Wood Mountain | 304 | E. R. Lessing, act. agent. | 720 00 | Dec. 1, 1908. | |
| 4 Elia Springs | 10 | J. H. Thompson | 720 00 | " 1, 1890. | |
| 5 Willow Birch | 20½ | F. Brown, line-man | 720 00 | Nov. 1, 1905. | |
| Totals | 130 | J. Thompson | 720 00 | March 1, 1910. | |
| | | M. A. Noel | 720 00 | Oct. 15, 1904. | |
| | | | 3,240 00 | | |
| <i>Duck Lake Line.</i> | | (Preceding table) | Commission 25 p.c. | Oct. 1, 1902. Dec. 1, 1907. | This line was built in 1904 and is being operated from the central telephone office at Edmonton. |
| | | | | | |
| 1 Patriche | 0 | D. H. Grant | 120 00 | Oct. 1, 1902. | This line was built in 1904 and is being operated from the central telephone office at Edmonton. |
| 2 Duck Lake | 9 | W. J. Learmouth | 120 00 | Dec. 1, 1907. | |
| Totals | 9 | | 240 00 | | |
| | | | | | |
| <i>Branch Telephone Lines.</i> | | (Preceding table) | Commission 25 p.c. | Oct. 1, 1902. Dec. 1, 1907. | This line has been in operation to St. Albert since 1895, and to Alexandria since 1903, from the central telephone office at Edmonton. |
| | | | | | |
| Edmonton | 0 | | | | This line has been in operation to St. Albert since 1895, and to Alexandria since 1903, from the central telephone office at Edmonton. |
| 1 Winterburn | 8½ | | | | |
| 2 Indian Agency | 5½ | | | | |
| 3 Spruce Grove | 8 | | | | |
| 4 Stoney Plain Stations, | 4½ | | | | |
| 5 " Centre | 3½ | | | | |
| Total | 32 | | | | |
| Edmonton | 0 | | | | |
| 1 St. Albert | 9 | | | | |
| 2 Rye | 12 | | | | |
| 3 Riviere-qui-Barre | 8 | | | | |
| 4 Alexandria | 5 | | | | |
| Total | 34 | | | | |

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GOVERNMENT TELEGRAPH SERVICE—Continued.

NORTHWEST LINES—Continued.

QU'APPELLE—EDMONTON SECTION.

| No. | Stations. | Inter- mediate Distance. | Agents and Operators. | Salaries per annum. | Date of Appointment. | Memo. |
|-----|--|--------------------------------|-----------------------|---------------------|-------------------------|---|
| | <i>Banff Telephone System.</i> | Miles. | | \$ cts. | | |
| ... | Local system in Banff National Park..... | 6 | | | | This system is looked after by Mr. Douglas, superintendent of the National Park. The local system was in operation for several years prior to 1903, when extensions were made to Aylmer Park and Lake Minnewanka. The original instruments were replaced by new ones and in all 13 sets were installed. |
| ... | Aylmer Park..... | 2 | | | | |
| ... | Lake Minnewanka..... | 6½ | | | | |
| 13 | Total | 14½ | | | | |
| | <i>File Hills Line.</i> | | | | | |
| ... | Fort Qu'Appelle..... | 0 | | | | This line was built in 1906, for the convenience of the Department of Indian Affairs. |
| 1 | LeBreton..... | 1 | | | | |
| 2 | Balcarres..... | 11 | | | | |
| 3 | File Hills Agency..... | 13 | | | | |
| | Total | 28 | | | | |
| | <i>Kansas Line.</i> | | | | | |
| 1 | Kansas (C.N.Ry.)..... | 0 | | | | This line was built in 1907, for the Department of Indian Affairs. Kansas is on the C. N. Ry., 100 miles N.E. of Fort Qu'Appelle and in no way connected with the Government telegraph line. |
| 2 | Indian Agency..... | 6½ | | | | |
| | Total | 6½ | | | | |

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE.
TELEPHONE LINES IN BRITISH COLUMBIA.

| No. | Stations. | Inter- mediate Distance. | Agents, &c. | Positions. | Salaries per Annum. | Date of Appointment. | Memor. |
|-----|---|--------------------------------|---------------------|---------------------|---------------------------|-------------------------|--------|
| | <i>Kamloops—Okanagan Valley Line.</i> | Miles. | | | \$ cts. | | |
| 1 | Kamloops..... | | L. A. Palmer | Agent..... | 420 00 | Jan. 1, 1907. | |
| 2 | McLeod..... | 12 | L. A. Palmer | For messenger... | 180 00 | | |
| 3 | Petersons..... | 4 | Wm. McLeod | Agent..... | Commiss. [†] | July, 1901. | |
| 4 | McDonalds..... | 4 | J. Bulman | " | " | " 1901. | |
| 5 | Stump Lake..... | 4 | W. R. McDonald | " | " | " 1901. | |
| 6 | Prickens..... | 2 | W. F. Palmer | " | " | June, 1905. | |
| 7 | Moore..... | 14 | J. N. Moore | " | " | July 1, 1905. | |
| 8 | Guthons..... | 9 | Jos. Gutcheon | " | " | " 1, 1905. | |
| 9 | Guthons..... | 2 | J. A. Gutcheon | " | " | May 1, 1907. | |
| 10 | Nicola..... | 8 | Mrs. M. V. Munro | " | 480 00 | July 1, 1905. | |
| 11 | Hospital..... | 8 | Mrs. M. V. Munro | Rent office..... | 120 00 | | |
| 12 | Merritt..... | 1 | Dr. Tutill | Agent..... | Commiss. | Nov., 1908. | |
| 13 | Cutler..... | 1 | G. B. Armstrong | " | " | Oct., 1908. | |
| 14 | Lower Nicola..... | 3 | H. S. Glassby | " | " | April, 1909. | |
| 15 | Hastings Ranch..... | 12 | Mrs. R. M. Woodward | " | " | July, 1906. | |
| 16 | Aspen Grove..... | 3 | Geo. McCullough | " | " | Nov., 1908. | |
| 17 | Munro..... | 2 | G. Robert Bates | " | " | June, 1908. | |
| 18 | Otter Valley..... | 20 | D. L. Munro | " | " | Nov., 1908. | |
| 19 | Talameen..... | 15 | J. G. Thynne | " | " | Oct., 1907. | |
| 20 | Granite Creek..... | 9 | J. H. Jackson | " | " | Sept., 1906. | |
| 21 | Princeton..... | 11 | F. P. Cooke & Co. | " | " | Oct., 1907. | |
| 22 | Hedley..... | 25 | Alex. Bell | " | 480 00 | Aug., 1908. | |
| 23 | Daly (Hedley)..... | | F. M. Gillespie | * Acting agent..... | 480 00 | | |
| 24 | Richters..... | 20 | Daly Reduction Co. | Rent office..... | 60 00 | Jan., 1908. | |
| 25 | Kerrius Station..... | 1 | F. Richter & Co. | Agent..... | Commiss. | Oct., 1908. | |
| | | | Geo. Kirby | " | " | Jan., 1908. | |
| | Carried forward..... | 190 | | | | | |

† Commission stations are paid 20 per cent of the Govt. line tolls.

* Exchange operator and agent. Connections made with local companies at Kamloops and Penticton.

† Branch line from Nicola.

1 GEORGE V., A. 1911

GOVERNMENT TELEGRAPH SERVICE.—*Continued.*
TELEPHONE LINES IN BRITISH COLUMBIA.—*Continued.*

| No. | Stations. | Inter- mediate Distance. | Agents, &c. | Positions. | Salaries per Annum. | Date of Appointment. | Memo. |
|-----|-------------------------|--------------------------------|------------------------|-----------------------------------|---------------------------|-------------------------|--|
| | | Miles. | | | \$ cts. | | |
| | Brought forward..... | 190 | S. McCuddy..... | Agent..... | Commiss. | July, 1909. | |
| 26 | Fairview..... | 18 | Hazel McKenzie..... | "..... | " | Nov., 1908. | |
| 27 | Vancouver Lake..... | 9 | W. B. Hume..... | "..... | " | Oct., 1907. | |
| 28 | Okanagan Falls..... | 6 | C. F. Layton..... | "..... | 480 00 | Oct., 1907. | |
| 29 | Penticton..... | 16 | W. H. Hayes..... | "..... | Commiss. | July, 1906. | |
| 30 | Summerland..... | 11 | Alice McDougald..... | "..... | " | " | |
| 31 | Peachland..... | 18 | D. E. Gallardy..... | "..... | " | " | |
| 32 | Gellatly..... | 10 | Wm. Collins..... | "..... | " | June 1906. | |
| 33 | Westbank..... | 1 | H. H. Millie..... | "..... | " | June 1908. | |
| 34 | Kelowna..... | 5 | Miss G. H. Belsey..... | Agt. and tel. op. | 780 00 | Mar., 1905. | |
| 35 | Okanagan Centre..... | 29 | J. N. Fekins..... | Agent..... | Commiss. | Jan., 1910. | |
| 36 | Vernon..... | 2 | S. A. Muir..... | "..... | " | June, 1908. | |
| 37 | Vernon..... | 15 | Lilly J. Wilcox..... | Joint agents with C.P. Tel. l. | 540 00 | Mar., 1905. | |
| 38 | Vernon, C.P.R..... | | Mary E. Carter..... | Agent..... | " | | The payment is made to the C.P. Tel. |
| 39 | Lumbly (Branch) | 17 | Miss E. Morand..... | Superintendent. | Commiss. | Dec., 1907. | \$45 per month; Govt. line proportion of salaries. |
| | Line generally..... | | C. S. Stevens..... | General repairer | 1,200 00 | June, 1904. | |
| | | | A. J. Woodburn..... | | 900 00 | June 1908. | |
| | Telegraph Wires. | | | | | | |
| | Vernon-Kelowna..... | 74 | | | | | |
| | Total..... | 412 | | | 6,120 00 | | |

Total—412 miles of wire; 338 miles of pole line.

* Telegraph line in operation as well between Kelowna and Vernon.

|| Branch line from Vernon.

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE.
LOCAL EXCHANGES IN OPERATION.

| Place. | Number of Subscribers. | RENTS PAID PER ANNUM. | | |
|-----------------|------------------------|-----------------------|------------|----------|
| | | Business. | Dwellings. | General. |
| Nicola | 14 | \$ | \$ | \$ 12 |
| Princeton | 22 | 24 | 18 | ..... |
| Hedley | 13 | 24 | 18 | ..... |

Main line rates charged are given in Tariff section of Report.

TELEPHONE LINES IN BRITISH COLUMBIA—*Continued.*

| No. | Stations. | Inter- mediate Distances. | Agents, &c. | Positions. | Salaries per Annum. | Date of Appointment. | Memo. |
|---------------------------------------|-----------|---------------------------------|---------------------|------------|---------------------------|-------------------------|---|
| <i>North Thompson River Line.</i> | | | | | | | |
| Kamloops | | | L. A. Palmer | Agent. | \$ ..... | ..... | Entered in Okanagan Valley section. |
| Hatley Creek | 14 | | Jas. Stratt | Messenger. | ..... | Dec. 1908 | The commission is 20 per cent of the Govt. line tolls on business done. Line complete as far as Louis Creek in 1908. |
| McCartons | 6 | | Jas. McCarten | Agent | Commission | " 1908 | |
| Struthers | 6 | | R. Struthers | " | " | " 1908 | |
| Louis Creek | 10 | | A. Goudreau | " | " | " 1908 | |
| Total | 36 | | | | | | |

This line is operated on toll system; the rates based on mileage in conjunction with the Okanagan Valley line.

1 GEORGE V., A. 1911

GOVERNMENT TELEGRAPH SERVICE—Continued.
BRITISH COLUMBIA, VICTORIA, CAPE BEALE SECTION.

| No. | Stations. | Inter- mediate Distance. | Agents and Operators. | Salaries per Annum. | Date of Appointment. | Memo. |
|---------------------|-----------------------------------|--------------------------------|------------------------------------|------------------------------|-------------------------|--|
| | | | | \$ cts. | | |
| 1 | Victoria | 0 | (Wm. Deo, Agent | 1,200 00 | Dec. 1, 1907. | NOTE.—The superintendence of this line has been in the hands of the resident architect at Victoria since October, 1901, when the arrangement theretofore in operation with the C. P. Ry. Co., was terminated. Proportion of salary. June 1, 1909. Allowance of \$7.50 horse hire when necessary to come to Victoria requiring line. During winter months only. |
| 2 | Sooke | 18 | (Wm. McIntosh, Mesgr. | 240 00 | Oct. 1, 1909 | |
| 3 | Otter Point | 8 | (K. Gordon, Agent | Commission 25 p.c. 360 00 | Dec. 1, 1908 | |
| 4 | Jordan River (Shirley) | 10 | (E. Gordon, Line Repr. | 720 00 | Dec. 1, 1891 | |
| 5 | Slide Hill | | (J. N. MacVicar, Repr. | 720 00 | June 1, 1909 | |
| 6 | Port Renfrew | 30 | (F. A. Dunbrack, Repr. | 720 00 | Feb. 1, 1910 | |
| 7 | Camp Bay | | (Mrs. E. C. Williams, Agt. | 480 00 | Sept. 22, 1903 | |
| 8 | Carmichael | 24 | (T. M. Baird, Repr. | 720 00 | Nov. 1, 1908 | |
| 9 | Chilose | | (E. Doyle, Repr. | 720 00 | Aug. 1, 1909 | |
| 10 | Darling | | (W. J. Macdonald, Repr. | 320 00 | Nov. 1, 1891 | |
| 11 | Cape Beale | 28 | (D. Logan, Repr. | 720 00 | Dec. 1, 1909 | |
| 12 | Banfield | | (Mrs. E. M. Scott, Agent. | 720 00 | April 1, 1898 | |
| | Total | 118 | (C. E. Munsley, Repr. | 720 00 | Jan. 1, 1909 | |
| | | | | | Sept. 1, 1908 | |
| REPAIRERS SECTIONS. | | | | | | |
| | Cape Beale-Banfield-Darling | 9 | (C. E. Munsley | | | |
| | Darling-Chilose | 8 | (D. Logan | | | |
| | Chilose-Knowshed | 12 | (J. Murphy | | | |
| | Knowshed-Port Renfrew | 14 | (J. Martin | | | |
| | Port Renfrew-Lost Creek | 15 | (T. M. Baird | | | |
| | Lost Creek-Jordan River | 15 | (M. Hay | | | |
| | Jordan River-Otter Point | 15 | (J. N. MacVicar, Acting Ins. | | | |
| | Otter Point-Victoria | 30 | (C. Gordon | | | |
| | Total | 118 | | | | |

* Telephone connections for the convenience of several firms in the neighbourhood have been established at *Jordan River* for Messrs. Bell, Irving & Co., Point no-Point; The B. C. Packer's Assoc., Point-no-Point and Jordan River; Capital City Canning Co., French's Ranch; J. H. Todd & Co., Coal Creek; 5 connections at *Otter Point* for Messrs. J. H. Todd & Son, The B. C. Packer's Assoc., Capital City Canning Co., and the B. C. M. Mess.; one connection in common at *Sooke Wharf*. The charge for the telephone in each of the above instances is \$86 per year; the regular telegraph tolls being paid in addition.

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE—Continued.

BRITISH COLUMBIA—Continued.

| No. | Stations. | Inter- mediate Distances. | Agents, &c. | Positions. | Salaries per Annum. | Date of Appointment. | Memo. |
|--------------------------------|----------------|---------------------------------|-------------------|--|---------------------------|-------------------------|---|
| <i>Alberni-Quaqnot Line.</i> | | | | | | | |
| 1 | Alberni | 0 | Mrs. P. A. Haslam | Agt. and Opr. | 180 00 | Dec. 1, 1902 | Wm. Henderson, Esq., Supt., Victoria, B.C. Proportion for this line. Line crosses canal at this point by submarine cable. |
| 2 | New Alberni | 2 | A. E. Waterhouse | " " | 25 00 | Oct. 1, 1903 | |
| 3 | Franklin Creek | 8 | | | | | |
| 3 | A mile cable | | | | | | |
| 3 | Ulnequest | 10 | F. Tyler | Agt. line-man | 650 00 | | Section extends from Franklin Creek to Pileston In- let; post office address, New Alberni. Private cable connection for local firm. |
| 4 | Toquart | 5 | J. E. Hillier | " " | 780 00 | Nov. 16, 1908 | |
| 5 | Ulnequest | 34 | H. J. Hillier | " " | 720 00 | Dec. 1, 1902 | |
| 6 | Clayoquot | 66½ | E. B. Garrard | " " | 720 00 | Oct. 1, 1902 | |
| | Stubbs Island | | | Account. Offc. | | | |
| | | 905½ | | | 3,080 00 | | |
| <i>Golden-Windermere Line.</i> | | | | | | | |
| 1 | Wilner | 0 | Mrs. J. E. Beahut | Agt. and Opr. | 480 00 | Oct. 1, 1908 | Wm. Henderson, Esq., Supt., Victoria, B.C. |
| 2 | Aldaher | 5 | J. Lake | " " | Commission. | " | |
| 3 | Windermere | 5 | J. C. Pitts | " " | " | " | |
| 4 | Spillmacleen | 16 | (J. A. Buckham. | " " | 480 00 | " | |
| 5 | Golden | 66 | (G. E. Sanborn. | Line repairer Golden to Windermere | 1,080 00 — 2,040 00 | " | |

1 GEORGE V., A. 1911

GOVERNMENT TELEGRAPH SERVICE—Continued.

BRITISH COLUMBIA—Continued.

| No. | Stations. | Inter- mediate Distance. | Agents, &c. | Positions | Salaries per Annum. | Date of Appointment. | Memo. |
|-----|---|--------------------------------|-------------------------|--------------|------------------------|-------------------------|-------|
| | <i>Vancouver-Salt Springs Line.</i> | Miles. | | | | | |
| 1 | Cable Landing to | 9 | E. Castley | Agt. and Opr | 25% commis. | July 1, 1905 | |
| 2 | Duncan Station | 3 | T. Atken | " " | " " | " 1, 1905 | |
| 3 | Maple Bay | 3 | A. Chisholm | " " | " " | " 1, 1905 | |
| 4 | Chisholm | 3 | Edwards & Co. | " " | " " | Mar. 1, 1902 | |
| 5 | Edwards Store | 3 | H. Ruckles | " " | " " | | |
| 6 | Beaver Point | 2 | Bullman-Allison L. Co. | " " | " " | | |
| 7 | Cushion Cove | 4 | G. J. Mowat & Co. .. | " " | " " | | |
| 8 | Ganges Harbour | | A. R. Bittancourt | " " | " " | July 1, 1905 | |
| 9 | Ganges | | L. S. Higgs | " " | " " | | |
| 10 | South Pender | | A. R. Spaulding | " " | " " | | |
| 11 | " Wharf | | W. Barchett | " " | " " | | |
| 12 | Browning Harbour | | J. Auchterlonie | " " | " " | | |
| 13 | Hope Bay | | A. A. Davidson | " " | " " | | |
| 14 | Clan Bay | | A. Deacon | " " | " " | | |
| 15 | Village Bay | | C. J. Macdonald | " " | " " | | |
| 16 | Mayne Island Hotel | | G. Georgeson | " " | " " | | |
| 17 | Pt. Comfort Lighthouse | | Barrill Bros. | " " | " " | | |
| | Galiano Island | | | " " | " " | | |

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE—Continued.

BRITISH COLUMBIA—Continued.

| No. | Stations. | Inter- mediate Distance. | Agents, &c. | Positions. | Salaries per Annum. | Date of Appointment. | Memo. |
|-----|-----------------------|--------------------------------|-------------------------|-------------|------------------------|-------------------------|--|
| | <i>Vernano-Comox.</i> | Miles. | | | \$ cts. | | |
| 1 | Nanaimo. | 0 | (A. M. Oliver. | Agent. | 900 00 | Jan. 1, 1908 | The superintendence of this line is in the hands of Wm. Henderson, Victoria, B. C. |
| 2 | Wellington. | 5 | (W. Spencer. | Messenger | 240 00 | May 5, 1908 | |
| 3 | Saanich Bay. | 15 | J. Martin. | Agent. | 25 p. c. com. | Apr. 1, 1893 | |
| 4 | Parksville. | 8 | P. L. Good. | " | 25 " | | |
| 5 | Qualicum. | 12 | (T. T. Hamilton. | Lineman | 600 00 | | |
| 6 | Qualicum School. | 1 | (Wm. Mills. | Agent. | 450 00 | June 1, 1903 | Parkville Quilicum section. |
| 7 | Fanny Bay. | 8 | Mrs. M. E. Crump. | " | 25 p. c. com. | | |
| 8 | Union Bay. | 8 | A. L. Lockwood. | " | 25 " | | |
| 9 | Cumberland. | 10 | Wm. Keenan. | " | 25 " | | |
| 10 | Courtenay. | 7 | (Jas. McNeil. | Lineman | 720 00 | Nov. 17, 1898 | Courtenay and Comox communicate by telephone at prearranged intervals. |
| | " | | (T. Hudson. | Agent. | 900 00 | | |
| | " | | H. G. Williams. | " | 720 00 | | |
| 11 | Comox. | 8 | J. McFreen & Son. | Subscriber | 25 p. c. com. | | |
| 12 | Oyster River. | 35 | John Johnson. | Agent. | 25 " | Nov. 1, 1895 | |
| 13 | Campbell River. | | Miss B. Macdonald. | " | 480 00 | | |
| | | | Miss B. Woodbus. | " | 25 p. c. com. | | |
| | | | H. Hagstrom. | " | 25 " | | |
| | | 121 | | | 5,010 00 | | |

1 GEORGE V., A. 1911

GOVERNMENT TELEGRAPH SERVICE—Continued.
BRITISH COLUMBIA—Continued.

| No. | Stations. | Inter- mediate Distance. | Agents and Operators. | Salaries per Annum. | Date of Appointment. | Memo. |
|---|--------------------------------|--------------------------------|-----------------------|------------------------|-------------------------|-------|
| <i>Dennison and Hornby Island Telephone Line.</i> | | | | | | |
| 1 | Fanny Bay. | 0 | See Nanaimo Comox. | | | |
| 2 | Dennison Is. east side-(cable) | 1 | Wesley Piersey. | Commission 25 per cent | Feb. 1, 1908 | |
| 3 | " west | 4½ | Thos. Chalmers. | " " | " 1, 1908 | |
| 4 | Hornby Is. (cable) | 1 | Thos. Smith. | " " | " " | |
| 5 | Smith's. | 1½ | | " " | " 1, 1908 | |
| | | 8 | | | | |
| <i>Nanaimo and Gabriola Telephone Line.</i> | | | | | | |
| 1 | Nanaimo. | 0 | E. C. Telephone Co. | " " | Feb. 1, 1909 | |
| 2 | Nanaimo River. | 6½ | J. Gordon. | " " | " 1, 1909 | |
| 3 | South Gabriola. (cable) | 3 | J. Deguen. | " " | " 1, 1909 | |
| 4 | Centre Gabriola. | 6 | J. Chapple. | " " | " 1, 1909 | |
| 5 | North Gabriola. | 7 | Mrs. J. Holmes. | " " | " 1, 1909 | |
| | | 19 | | | | |

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE.
YUKON LINES.

NAMES of employees and monthly salaries, &c., Yukon Telegraph Service, which includes Port Simpson, Barkerville, Quesnel and Lillooet branches.

| Number. | Stations. | Intermediate Distance. | Positions. | Salaries per Month. | Tariff. | Night Rate. |
|---------|-----------------|------------------------|-----------------------------------|---------------------|----------|-------------------------------------|
| | | | | 8 cts. | | |
| 1 | Ashcroft | | C. E. Gooding, manager. | 60 00 | | |
| | | | C. Belleau, operator | 45 00 | | |
| | | | R. E. Gooding, operator. | 42 00 | | |
| | | | W. A. Gow, lineman | 75 00 | | |
| | Cache Creek | 4 | Accommodation office | 50 p. c. com. | 25 and 2 | 25 and 1 |
| 2 | Bonaparte | 35 | " | " | 25 " 2 | 25 " 1 |
| 3 | Pavilion | 36½ | Mrs. Bryson | " | 50 " 3 | 25 " 1 |
| 4 | Lillooet | 29 | S. A. McFarlane, agt. & lineman. | 60 00 | 50 " 3 | 25 " 1 |
| 5 | Clinton | 23½ | E. LeBourdais, opr. and lineman. | 60 00 | 25 " 2 | 25 " 1 |
| 6 | 115 Mile House | 55 | Thos. Butler, operator. | 60 00 | 25 " 2 | 25 " 1 |
| 7 | 150 " | 35 | O. Landry, " " | 75 00 | 50 " 3 | 30 " 2 |
| 8 | Harpers Camp | 33 | A. J. Patenaude, opr. and lineman | 60 00 | 50 " 3 | 30 " 2 |
| 9 | Bullion | 27 | " | " | " | " |
| 10 | Quesnel Forks | 4 | Grant Grindler, " " | 66 74 | 50 " 3 | 30 " 2 |
| 11 | Soda Creek | 28½ | C. H. Smith, " " | 60 00 | 50 " 3 | 30 " 2 |
| 12 | Alexandria | 21 | J. A. Bowles, " " | 60 00 | 50 " 3 | 30 " 2 |
| 13 | Quesnel | 33 | S. H. Patenaude, " " | 75 00 | 50 " 3 | 30 " 2 |
| 14 | Lafontaine | 46 | Cariboo Consolidated Co | 50 p. c. com. | 50 " 3 | " |
| 15 | Barkerville | 15 | T. F. Murphy, opr. and lineman. | 60 00 | 50 " 3 | " |
| | | | M. Montgomery, lineman. | 70 00 | " | " |
| 16 | Blackwater | 42 | S. G. Lawrence, operator. | 75 00 | 75 " 5 | " |
| | | | R. W. Smith, " " | 75 00 | 75 " 5 | " |
| 17 | Bobtail Lake | 37 | W. J. McAllan, lineman. | 70 00 | " | " |
| | | | W. J. Milne, operator. | 75 00 | 75 " 5 | " |
| 18 | Stoney Creek | 32 | J. D. Charleson, lineman. | 70 00 | " | " |
| | | | G. W. Proctor, operator | 75 00 | 75 " 5 | " |
| 19 | Fraser Lake | 21 | Harry Le Duke, lineman | 70 00 | " | " |
| | | | M. McKinley, operator. | 75 00 | " | " |
| 20 | Burns Lake | 53 | Geo. Wallace, lineman | 70 00 | 100 " 7 | " |
| 21 | South Bulkley | 27 | W. N. Clark, " " | 70 00 | 100 " 7 | " |
| 22 | Aldermere | 52 | Ed. Murphy, operator. | 75 00 | 125 " 10 | " |
| | | | H. Fink, lineman. | 70 00 | 125 " 10 | " |
| 23 | Morricetown | | G. T. Carpenter. | 75 00 | " | " |
| | | | W. W. Wrathall, operator. | 100 00 | " | " |
| 24 | Hazleton | 50 | E. R. Cox, " " | 100 00 | 100 " 7 | Exceptional rate from June 1, 1910. |
| | | | E. E. Charleson, line fore-man | 150 00 | " | " |
| | | | Fred. Daniels, messenger. | 50 00 | " | " |
| | | | D. Mitchell, operator. | 75 00 | " | " |
| 25 | Bostroms | | Elz. Graham, " " | 60 00 | 125 " 10 | " |
| 26 | Meanskinsnit | 35 | " | " | " | " |
| 27 | Skene Canyon | 47 | " | " | " | " |
| 28 | Lorne Creek | 24 | A. J. Morrison, " " | 75 00 | " | " |
| | | | C. E. Carpenter, " " | 75 00 | " | " |
| | | | John Wrathall, " " | 80 00 | " | " |
| 29 | Kitselas | | F. D. Wilson, lineman. | 70 00 | " | " |
| 30 | Copper River | | S. W. Doblie, operator. | 75 00 | " | " |
| 31 | Kitsumkalnu | | R. B. Demorest, " " | 75 00 | " | " |
| 32 | Batmans | | J. D. McIntosh, " " | 75 00 | " | " |
| 33 | Graveyard Point | | H. E. Carroll, " " | 75 00 | 150 " 10 | " |
| 34 | Clearwater | | H. A. MacIsaac, " " | 75 00 | " | " |
| | | | H. B. Birch, " " | 75 00 | " | " |
| 35 | Hole-in-Wall | | G. A. McGrath, lineman. | 70 00 | " | " |
| 36 | McLeods | | E. W. Snodgrass, operator | 75 00 | " | " |
| | | | W. W. Noonan, " " | 75 00 | " | " |
| 37 | Telegraph Point | 53 | Geo. Neill, lineman. | 70 00 | " | " |
| | | | Gordon Grassett, operator. | 75 00 | " | " |
| 38 | Aberdeen | 4½ | H. E. Elsdon, lineman. | 70 00 | " | " |
| | | | J. A. Thorne, line foreman | 100 00 | " | " |
| 39 | Port Simpson | | M. W. O'Neill, operator | 50 00 | 150 " 10 | " |
| 40 | North Pacific | | Paul Wicks, lineman | 80 00 | " | " |
| | | | F. W. Dowling, manager | 150 00 | 100 " 7 | Exceptional rate from Nov. 1, 1909. |
| | | | G. W. McKay, operator | 100 00 | " | " |
| 41 | Prince Rupert | 40 | Wm. Blackstock, lineman | 100 00 | " | " |
| | | | Jack Dowling, messenger. | 1 00 per day | " | " |
| Total | | 916 | | | | |

* Branch from Ashcroft. † 150 Mile House. ‡ Quesnel. § Hazelton.

1 GEORGE V., A. 1911

GOVERNMENT TELEGRAPH SERVICE--*Continued.*NAMES of employees and monthly salaries, &c., Yukon Telegraph Service, &c.—*Con.*YUKON LINES—*Continued.*

| Number. | Stations. | Inter- mediate Distance. | Positions. | Salaries per Month. | Tariff. | Night Rate. |
|------------------|----------------------|--------------------------------|--|---------------------------|------------|-------------|
| | | | | \$ cts. | | |
| 41 | 1st Cabin..... | 27 | H. A. Taylor, operator | 75 00 | | |
| 42 | 2nd Cabin..... | 22 | T. J. Hughes, operator | 75 00 | | |
| | | | W. T. Weekes, lineman..... | 70 00 | | |
| 43 | 3rd Cabin..... | 25 | E. E. Falconer, operator..... | 75 00 | | |
| | | | L. Mason, lineman..... | 70 00 | | |
| 44 | 4th Cabin..... | 20 | Douglas Potts, operator..... | 75 00 | | |
| | | | W. R. S. Oag, lineman..... | 70 00 | | |
| 45 | 5th Cabin..... | 20 | E. A. Hawley, operator..... | 100 00 | | |
| | | | Louis Dubois, lineman..... | \$3 per day. | | |
| 46 | 6th Cabin..... | 20 | Jas. Mooney, operator..... | 100 00 | | |
| | | | J. R. Barker, lineman..... | \$3 per day. | | |
| 47 | 7th Cabin..... | 19 | Geo. Barrett, operator..... | 100 00 | | |
| | | | R. Hamilton, lineman..... | \$3 per day. | | |
| 48 | 8th Cabin..... | 19 | H. P. Large, operator..... | 100 00 | | |
| | | | R. Todd, lineman..... | \$3 per day. | | |
| 49 | 9th Cabin..... | 17 | G. W. Smith, operator..... | 100 00 | | |
| | | | J. McMillan, lineman..... | \$3 per day. | | |
| 50 | Echo Lake..... | 32 | J. Muir, operator..... | 100 00 | | |
| | | | C. Vance, lineman..... | \$3 per day. | | |
| 51 | 25-Mile Cabin..... | 25 | R. McKay, operator..... | 100 00 | | |
| | | | Jos. Williams, lineman..... | \$3 per day. | | |
| 52 | Raspberry Creek..... | | | | | |
| 53 | Iskoot..... | 16 | F. N. Jackson, operator..... | 100 00 | 175 and 10 | |
| | | | Jas. Huston, lineman..... | \$3 per day. | | |
| 54 | Telegraph Creek..... | 61 | A. S. Gillespie, operator..... | 100 00 | | |
| | | | W. S. Simpson, lineman..... | 175 00 | | |
| | | | A. J. Charleson, line foreman..... | 50 00 | | |
| 55 | Shesley..... | 45 | A. John-on, operator..... | 82 50 | | |
| | | | | 75 00 | | |
| 56 | Nahlin..... | 61 | G. W. Hughes, operator..... | 82 50 | 200 " 15 | |
| | | | W. S. Simpson, jr., lineman..... | 75 00 | | |
| 57 | Nakina..... | 49 | F. B. Webster, operator..... | 82 50 | | |
| | | | Geo. Jeffrey, lineman..... | 75 00 | | |
| 58 | Pike River..... | 40 | R. J. Barton, lineman and oper- ator..... | 82 50 | | |
| | | | A. B. Taylor, manager..... | 116 66 | | |
| 59 | Atlin..... | 23 | J. B. Watson, operator..... | 100 00 | | |
| | | | D. H. Gagné, line foreman..... | 75 00 | | |
| 60 | Center Cabin..... | 35 | | | 225 " 15 | |
| | | | W. C. Fraser, operator..... | 82 50 | | |
| 61 | Tagish..... | 40 | Geo. Walker, lineman..... | 75 00 | | |
| | | | | 75 00 | | |
| 62 | Carcross..... | 18 | S. E. Chambers, operator..... | 82 50 | | |
| | | | H. Gilchen, dist. supt..... | 210 00 | 250 " 15 | |
| | | | G. S. Fleming, operator..... | 150 00 | | |
| 63 | Whitehorse..... | 65 | W. Lafontaine, clerk..... | 115 00 | | |
| | | | Wm. Watson, messenger..... | 25 00 | | |
| 64 | Lower Laberge..... | 59 | E. M. Stehley, operator..... | 82 50 | | |
| 65 | Hochlingqua..... | 30 | R. T. McDonald, operator..... | 82 50 | | |
| 66 | Big Salmon..... | 34 | H. O. Lokken, lineman..... | 75 00 | | |
| | | | H. McMillan, operator..... | 82 50 | | |
| 67 | Tantalus..... | 30 | | | | |
| 68 | Five Fingers..... | | | | | |
| 69 | Yukon Crossing..... | 8 | Aubrey Tennant, operator..... | 82 50 | | |
| | | | Angus Morrison, lineman..... | 75 00 | 275 " 75 | |
| 70 | Fort Selkirk..... | 50 | S. A. Courtenay, operator..... | 82 50 | | |
| | | | Geo. Minchin, lineman..... | 75 00 | | |
| 71 | Coffee Creek..... | 30 | Jno. O'Regan, operator..... | 82 50 | | |
| | | | C. Togleberg, line foreman..... | 75 00 | | |
| 72 | Stewart River..... | 75 | Gustin, Aish, operator..... | 82 50 | | |
| 73 | Ogilvie..... | 23 | R. P. Hall, operator..... | 82 50 | 300 " 20 | |
| Carried forward. | | 1,954 | | | | |

SESSIONAL PAPER No. 19

GOVERNMENT TELEGRAPH SERVICE—*Continued.*NAMES of employees and monthly salaries, &c., Yukon Telegraph Service, &c.—*Con.*YUKON LINES—*Concluded.*

| Number. | Stations. | Intermediate Distance. | Positions. | Salaries per Month. | Tariff. | Night Rate. |
|---------|---|------------------------|--|--|------------|-------------|
| | Brought forward.. | 1,954 | | \$ cts. | | |
| 74 | Dawson | 48 | { W. Browlee, manager..... G. A. McLachlan, operator... J. P. Champagne, cashier.... Wm. Mellish, messenger..... C. A. Cuture, line foreman .. | 150 00 125 00 125 00 \$3 per day. 125 00 | | |
| 75 | Forty Mile..... | 55 | J. W. Wilkison, operator..... | 82 50 | | |
| 76 | Boundary | 49 | { J. T. Phelan, supt..... J. J. Healy, accountant..... Emma Keays, stenographer. . P. R. Quain, clerk. | 150 00 208 33 140 00 80 00 100 00 | 325 and 20 | |
| | Vancouver..... | | | | | |
| | Actual length of line in question—difference in distances given as above and in previous reports. | 2,097 155½ | | | | |
| | Total.... | 2,252½ | | | | |

YUKON TARIFFS.

The rates given above for points north of Quesnel are one-third less than those primarily adopted, which were calculated on the general basis of 50 cents for 100 miles and 25 cents for each additional 100 miles, counting the distance from Ashcroft.

Exceptional Rates.—Hazleton to Ashcroft 1.00 and 7, June 1, 1910; Prince Rupert to Ashcroft, 1.00 and 7, November 1, 1909.

The local rates between offices north of Quesnel are calculated on the basis of 50 cents for 100 miles and 25 cents for each additional 100 miles, and the local rates between offices north of Atlin are fixed at 50 cents for each 100 miles.

Cable Messages.—On transatlantic business, the word rate is twice as much as the additional word rate given in the list for all points north of Ashcroft-Baskerville, 3x2=6c.; Dawson, 20x2=40c. per word.

On transatlantic business the word rate is the additional word rate plus 4c.; Barkerville, 3+4=7c.; Dawson, 20+4=24c. per word to or from Ashcroft.

Press Despatches.—For the Yukon line the rate is 1 cent per word, minimum charge, \$1; this applies to the whole line. Exception, Barkerville-Ashcroft section (local), minimum charge 50 cents.

Yukon system connects at boundary with U. S. Sig. Service Telegraph System.

1 GEORGE V., A. 1911

GOVERNMENT TELEGRAPH LINES.

SPECIAL TARIFF.

Cable Messages.—Rates for cable messages passing over the Yukon line will be found in connection with the Yukon tariff in the preceding pages.

Elsewhere, the rate for transatlantic messages passing over the government lines is the same as for ordinary through messages, excepting where the ordinary tariff is more than 25 cents; in such cases the government line rate is 4 cents per word, with a minimum charge of 25 cents. For example:—

For a message of six words or less, the charge is 25 cents for government lines.

For a message of seven words the charge is (7 x 4) 28 cents for government lines.

For a message of twelve words the charge is (12 x 4) 48 cents for government lines.

In every case the counting of words includes the address and signature in the same way as for transatlantic cable tolls.

Press Despatches.—The rate for press despatches on the government lines (excepting the Yukon line), is 20 cents per 100 words; no single message less than 20 cents.

For the Yukon line the rate is 1 cent per word, minimum charge \$1; this applies to the whole line. Exception, Barkerville-Ashcroft section (local), minimum charge 50 cents.

REGULAR TARIFF.

NOVA SCOTIA.

Lines in Cape Breton.

Local rate between offices. 25-1

Through rate, on business exchanged with the Western Union Tel. to and from

North Sydney transfer office. 15-1

Night messages are exchanged with the Western Union Telegraph Company for offices on these lines. Rate, 1 cent per word with minimum of 15 cents. The local night rate is 1 cent per word with minimum of 25 cents.

Line from Barrington to Cape Sable—Local rate, 12-1.

Newellton. Through rate 12-1 from Barrington, W.U. office.

Cape Sable Lighthouse. " " "

This line is now operated by the local telephone company. Terms of lease provide for former telegraph rate as above not being exceeded.

NEW BRUNSWICK.

Line from Chatham to Point Escuminac.

Local rate between offices. 25-1

Through rate, on business exchanged with the G. N. W. Tel. Co., to and from

Chatham transfer office. 15-1

Bay of Fundy.

Line from Eastport, Me., to Campobello, Grand Manan, and Whitehead Islands—

Local rates between offices on Grand Manan and Whitehead Islands, 15-1; Grand Manan and Campobello Island, 25-2; The Islands and Eastport, Me., 25-2, W.U.O.

Through rate same as local rate on business exchanged with W. U. Tel. at

Eastport. 25-2

* Where the tariff rate is entered as 25-1 or 25-2, &c., the meaning is that the rate is 25 cents for ten words and 1 cent or 2 cents for each additional word.

SESSIONAL PAPER No. 19

QUÉBEC.

Anticosti Island.

| | |
|---|------|
| <i>Local rate</i> between offices. | 25-1 |
| Between offices on Anticosti Island and Gaspé. | 50-2 |
| “ “ “ on the North Shore, St. Lawrence and Chicoutimi lines. | 50-2 |
| <i>Through rate</i> , same as local rate on business exchanged with G.N.W. Tel. at Gaspé. | 50-2 |

Magdalen Islands.

| | |
|---|------|
| <i>Local rate</i> between offices. | 25-1 |
| Between offices on Magdalen Islands and offices on government lines on Cape Breton. | 50-2 |
| <i>Through rate</i> on business exchanged with Western Union Tel. at North Sydney same as local rate. | 50-2 |

St. Pauls Island.

| | |
|---|------|
| Between St. Pauls Island and offices on government lines in Cape Breton. | 50-2 |
| <i>Through rate</i> to and from North Sydney on business exchanged with W. U. Tel., same as local rate. | 50-2 |

North Shore St. Lawrence and Chicoutimi.

| | |
|---|------|
| <i>Local rates</i> between offices within 100 miles apart. | 15-1 |
| Between offices over 100 miles apart. | 25-1 |
| Between offices on these lines and Anticosti via Long Point. | 50-2 |
| Conjoint rate between offices on government lines west of Bersimis and offices on the G.N.W. line as far as and including Quebec. | 25-2 |
| <i>Through rate</i> on business exchanged with the G.N.W. Tel. line for points beyond Quebec. | 25-1 |

NOTE.—The above lines connect with the G N. W. Telegraph system at Chicoutimi and at Bay St. Paul and Murray Bay, but the checking of all through business exchanged with the company is done at Quebec.

*Quarantine System.**Line from Québec via Orleans Island and Isle aux Reaux.**Local rates* between offices:—

| | |
|---|------|
| Quebec and Grosse Isle. | 25-1 |
| Quebec and Orleans Island and Isle Reaux. | 15-1 |
| Orleans Island and Grosse Isle. | 25-1 |
| Isle Reaux and Grosse Isle. | 15-1 |
| On Orleans Island. | 15-1 |

Through rate same as local on business exchange with G.N.W. Tel. at Quebec.

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*Beauport-Laval Line (Telephone).**Local rate* between offices:—

| | Conver- sations, 3 minutes. | Messages, 20 words & 5 words. |
|--|-----------------------------------|-------------------------------------|
| Beauport and Laval and intermediate. | 10 | 10-3 |
| Quebec exchange and Laval and intermediate. | 15 | 15-5 |
| <i>Through rate</i> to be added to the Bell Telephone Company's rate beyond Quebec. | 15 | 15-5 |

NOTE.—Of these 15c. tolls, $\frac{2}{3}$ goes to the company in each instance.

ONTARIO.

*Pelée Island Line (Telephone).**Local rate* between offices:—

| | |
|---|------|
| On the mainland Leamington-Point Pelée. | 15-1 |
| On the island. | 15-1 |
| On the island and Leamington. | 25-1 |

Through rate on business exchanged with the G.N.W. Tel. at Leamington. . . 15-1

This line is operated by telephone in conjunction with the Bell Telephone Co. Charges for conversations being based on local tolls plus the regular tolls of the company beyond Leamington. (Local rates, 15c. or 25c. for 3 minutes conversation and proportionate charge for any period in excess of 3 minutes.)

NORTHWEST TERRITORIES—SASKATCHEWAN AND ALBERTA.

Qu'Appelle—Edmonton Line.

| | |
|---|------|
| <i>Local rates</i> between offices within 12 miles apart. | 15-1 |
| Between offices already reached by company's lines, excepting when the company's rate is higher. | 25-2 |
| Between offices solely on government line. | 35-2 |

Through rates, for business exchange with the connecting companies, same as the above local rates.*Moosejaw—Wood Mountain Line.*

| | |
|--|------|
| <i>Local rate</i> between offices. | 25-2 |
| <i>Through rate</i> the same. | |

BRITISH COLUMBIA.

Vancouver Island Lines.

| | |
|--|------|
| <i>Local rates</i> between offices. | 25-2 |
| <i>Conjoint rate</i> between offices on government lines and C. P. Tel. lines on Van- couver Island. | 25-2 |
| <i>Through rate</i> , business exchanged with Can. Pac. Tel. at Nanaimo and Vic- toria, same as local rate. | 25-2 |

Golden-Windermere Line (Telephone).

| | |
|---|------|
| <i>Local and through rate</i> | 25-2 |
|---|------|

Subscribers for telephones at \$36 per year are exempt from above tolls for mes-
sages.

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Salt Spring Island, Pender Island, &c. (Telephone).

| | |
|--|------|
| <i>Local rate</i> —Conversations, 2 minutes. | 25c. |
| Each additional minute. | 15c. |

Through rate—The above line connects with the B. C. Telephone Co. at Duncan Station. The company's tolls are added to the above rates on through business.

Conjoint rate—Between offices on the above islands and offices on the C.P. line, on government line reached by the C. P. Tel. on Vancouver Island. 25-2

Kamloops-Okanagan Valley System (Telephone).

Local and through rates, 25c. to 60c., according to distances between offices 100 miles apart and over, in stretches of 50 miles:—

| | | | | | | |
|--|------|---|-----|---|---|--------|
| Where message rate is 25c. for 10 words, 2c. for extra words; convers'n 10c. p. min. | | | | | | |
| " | 35c. | " | 3c. | " | " | 15c. " |
| " | 40c. | " | 3c. | " | " | 20c. " |
| " | 50c. | " | 4c. | " | " | 25c. " |
| " | 60c. | " | 4c. | " | " | 30c. " |

Minimum charge for message, 25c.; for conversation, 15c.

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[illegible]

APPENDICES.

GOVERNMENT TELEGRAPH SERVICE.

ANNUAL REPORT FOR 1909-10.

- Sectional reference
- (1) Cape Breton lines.
 - (2) Bay of Fundy lines.
 - (3) Magdalen Islands.
 - (4) Anticosti Island lines.
 - (5) North Shore, St. Lawrence and Chicoutimi.
 - (5a) North Shore St. Lawrence, East of Bersimis.
 - (6) Quarantine Telegraph system.
 - (7) Pelee Island system.
 - (8) Northwest lines.
 - (9) " (Inspector).
 - (10) British Columbia lines.
 - (11) Kamloops-Penticton lines.
 - (12) Yukon telegraphs.
 - (13) Cable ship *Tyrian*.

REPORT (1) CAPE BRETON.

OFFICE OF THE DISTRICT SUPERINTENDENT,

ST. JOHN, N.B., May 2, 1910.

D. H. KEELEY, Esq.,

General Superintendent,

Government Telegraph Service,

Ottawa, Ont.

DEAR SIR,—

I beg leave to submit the following report on the Government Telegraph Lines in Cape Breton for the year ending March 31, 1910.

| | Miles in Operation. | No. of Offices. | No. of Operators. | No. of Repairers and Linemen. |
|--|------------------------|--------------------|----------------------|--|
| At date of last report | 626½ | 69 | 69 | 27 |
| Added during the year | 58½ | 5 | 5 | 3 |
| Offices closed during the year | | 1 | 1 | |
| At date of this report | 684½ | 73 | 73 | 30 |

The additional mileage embraces the extension from Strathlorne to Whycocomagh, approximately 29½ miles poles completed March 15th, 1910, 32 miles of wire, including loops. Also between Enon and Victoria Bridge, 24 miles, and between Victoria Bridge and Gabarus Lake, 5 miles, completed January 15th, 1910.

New offices were opened at the undermentioned points, viz.:—

Piper's Cove, C.B., April 1st, Miss Katie McNeil, agent and operator, salary \$50 per annum.

Benacadie Pond, C.B., May 26th, John N. McNeil, agent and operator, salary \$50 per annum.

Benacadie, C.B., July 8th, Gregory Farrel, agent and operator, \$50 per annum.

North River Bridge, C.B., November 18th, E. J. Morrison, agent and operator, salary \$50 per annum.

Rockdale, C.B., January 7th, 1910, D. S. Pottie, agent and operator, 25 per cent of this line receipts and checks, without guarantee.

The office at Cape St. Lawrence was closed temporarily from Sept. 30th to Dec. 13th, on account of the operator, Mrs. Chas. Jamieson having been called away from home.

The office at Fourchie was also closed from Feb. 13th until March 1st, on account of location of office being changed.

The office at New Campbellton was closed from Nov. 15 until Feb. 1st, on account of Agent J. S. Burchill resigning, necessitating the employment of a new operator, viz., Miss Annie Morrison, at same salary, namely, \$50 per annum.

The office at Murray, C.B., was closed on Nov. 30th last, chiefly on account of the cessation of operations by the North River Lumber Company, the new office at North River Bridge caring for the business in that section.

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Changes in repairers were made as follows, viz:—

Frank Warren, repairer, Ingonish, covering section between that point and Sugar Loaf, August 1, salary \$100 per annum, vice Repairer Chas. Smith, same rate of pay, resigned.

Murdoch McLeod, Hillside, covering section between Little Bras D'Or and Kempt Head, August 1st, 1909, salary \$50 per annum, vice R. R. McKenzie, Repairer S. S. Boularderie, same rate of pay, resigned.

Alexander McFarlane, repairer, Margaree Harbour, covering section between that point and S. W. Margaree, salary increased from \$40 to \$50 per annum, dating from January 1st, 1910, an additional 6 miles of loop from the diversion of line to N. E. Margaree office and return, having been added to his section.

S. S. Burke, gen's repairer, Ingonish, salary increased from \$35 to \$40 per month, dating from January 1st, 1910, making his rate of pay more equitable as compared with the other general repairers on the Cape Breton section.

New repairers were employed as follows, viz:—

John L. McDonald, Grand Narrows, covering the section between that point and Eskasoni, from July 1st, salary \$50 per annum.

Daniel McKillop, Grand River, covering the section between that point and Fourchie, from July 1st, 1909, salary \$50 per annum.

Hector Urquhart, Grand River, covering the section between that point and Enon Junction, from July 1st, salary \$50 per annum.

GENERAL NOTES, ETC.

The cable between Meat Cove and the Magdalen Islands failed on January 6th, and remained so up to the close of the fiscal year. The cable between Bay St. Lawrence and St. Paul's Island was interrupted temporarily for three days during the month of December.

The Meat Cove and Boularderie wires were placed on 176 new cedar poles, erected by the Eastern Telephone Company under an arrangement with the company, thus completing the transfer of the lines between the town limits of North Sydney and Little Bras D'Or, in continuation of similar work done during the previous fiscal year in North Sydney town.

Under General Repairer Burke, the Murray loop line was thoroughly overhauled, and some 368 new poles put up, placing it in first-class shape.

The Hawkesbury-Grand River section was carefully attended to by General Repairer Bissett, a large number of poles reset and all slack wire taken up.

Upon instructions from the department, John F. McMillan was engaged as foreman to repair that section of the line between Port Hastings and Half-Way Shanty, and started work July 15th, going over the section as far as the Half-Way Shanty, resetting poles, cutting out bad joints, inspecting offices, etc., completing work on Dec. 18th.

The general repairs on the section between Half-Way Shanty and Meat Cove were taken in hand by Repairer Ronald Fraser, who placed some 51 new poles on that piece of line, making it safe for another year, at least.

Outside of the usual patrol trips, no work of importance was done on the section between Sydney and Seatarie, it having been gone over and some 250 poles having been set the previous year, thus rendering no work of importance necessary.

General repairs were made to the section of line between Gabarus and Fourchie, distance 5 miles, by Foreman H. C. Gunn, under instructions from the department, and all the defective poles renewed, resets made where necessary, and all slack wire taken up, and bad joints taken out.

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There was no work of importance done on the line on Boularderie Island outside of a few resets, and general patrol, made by General Repairer Logue of North Sydney.

Yours faithfully,

D. C. DAWSON,

Superintendent.

REPORT No. 2.—BAY OF FUNDY.

FLAGG'S COVE,

GRAND MANAN, N.B., March 30th, 1910.

D. H. KEELEY, Esq.,

General Superintendent, Govt. Tel Service,
Ottawa.

DEAR SIR,—I beg herewith to submit my annual report for the year ending March 31, 1910. From March until June the lines were working unusually well, but from the first of June the cable between Grand Manan and Campobello was very unsatisfactory, until on July 5th, it gave out completely. The cable ship *Tyrian* arrived here on August 10, found the break near the Long's Eddy landing, and completed the repairs on August 14th.

Since then the line has been working well.

At Campobello a new line was built from the office at Welch-pool to the cable landings, and is now in good condition. The cost of this including poles was \$233.41.

On Grand Manan the lines gave good satisfaction, with the exception of a few interruptions caused by the telephone wires during severe storms.

The telephone line from Seal Cove to Southwest Head was repaired in August and four new telephones were installed. This line is now working well and a great convenience to the people at South Head.

There has been only one change in the staff of operators, Miss McFarland, operator, at Flagg's Cove, resigned, and her place is filled by Mr. J. R. Parker.

The whole system is in good condition except that the wire from Long's Eddy to Flagg's Cove needs to be renewed and this will be done as soon as the weather permits, as the wire has just come to hand.

The statement of offices, operators, etc., is inclosed herewith. (See tabular statements preceding reports).

C. C. SEELY,

District Superintendent.

REPORT No. 3.—MAGDALEN ISLANDS.

OFFICE OF THE DISTRICT SUPERINTENDENT,

GRINDSTONE, MAGDALEN ISLANDS, Que., April 12th, 1910.

D. H. KEELEY, Esq.,

Ottawa, Ont.

DEAR SIR,—I hereby submit my annual report from March 31st, 1909, to March 31st, 1910. The following works and alterations took place on the Magdalen Islands

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telegraph lines, viz.: The Bryon Island cable was interrupted April 6th; on the 24th of May the Meat Cove cable was also interrupted. About the last of May, as the *Tyrian* came along with few miles of spare cable, she repaired the Meat Cove, which was working O.K., June 5th, but she returned to some other repairing, leaving the Bryon Island cable to repair; she was back again and good communications were given to Byron Island on August 3rd. The Barachois office was connected to the main line upon the completion of a mile (about) of line construction, worked well June 22nd. Another office was opened at Bryon Island lighthouse, the operator was taught and a line constructed from Dingwell, a distance of about $3\frac{1}{2}$ miles; a fair circulation being made between offices on Bryon Sept. 28th. There are some difficulties in transferring to Grosse Isle with the new office yet, some alteration that we cannot make will have to be made in these instruments I think.

On January 4th, 1910, the Meat Cove cable gave out again and has been interrupted ever since. The Etang du Nord Lighthouse telegraph office is unoccupied for the want of an operator. The Grindstone office has been out of attendance ever since Mr. Leslie left the place two years ago. And the remainder of the line is working satisfactorily. Hoping you have the information needed by this report.

I remain, yours truly,

A. LEBOURDAIS,

District Superintendent.

REPORT 4.—ANTICOSTI ISLAND.

OFFICE OF THE DISTRICT SUPERINTENDENT.

WEST POINT, ANTICOSTI ISLAND, Q., April 1st, 1910.

D. H. KEELEY, Esq.,

Gen. Supt. Govt. Tel. Service,
Ottawa.

DEAR SIR,—I beg leave to submit my annual report on government telegraph service under my charge for the year ending March 31st, 1910, as requested by your letter dated 4th ultimo.

We have 230 miles of line in operation, and I must say again that travelling on the whole length of this line is hard and dangerous, but more so in the fall and spring.

I am pleased to say that our line is in good working order, and has been so the whole time except an interruption that occurred between South and Heath Point last December. It was three weeks without being repaired owing to local repairers not being able to leave their stations and the impossibility of sending one of the general repairers, rivers being all open.

Last summer's general repairs have made our line on its whole length in good condition, but in such a wild country as we are, there is always something to do when on general repairs. The spruce poles from end of North Shore cable up to English Bay are all rotten, and as you authorized me I am getting poles cut just now to renew the whole line or rather the old poles between above two named places. The work will be done by one of the general repairers and a couple of men, and as soon as the condition of the ground permits.

I am also pleased to say that the appointment of a second general repairer seems to work all right thus far, and I don't see that we could have done better.

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Both our cables had been repaired last summer and since then both have worked O.K. I hope the ice won't interfere with any this spring.

A new house has been built at Salt Lake for one of the general repairers at the cost (cash paid here) of \$1,006.22. Salt Lake being a so out of the way place that transport of men and material has increased the cost of that house a good bit. The house is well built and comfortable, I am glad to say.

Fox Bay station has been closed since last 1st August, the operator having resigned and left the island, Mr. Menier's men being there until October. I got a telephone instrument connected with Heath Point station, so they could transmit their business to that station and from there messages were sent to addresses. I have been busy trying to form an operator for Fox Bay station, but I am unable to say yet if the man will be capable enough to take charge of that office by the opening of navigation. The trouble is this man speaks hardly any English and all the business is transacted in that language at Fox Bay. However, I shall advise you as soon as possible re that operator.

There is no doubt but that the department will have to increase operators' salaries again or our agents will resign. They cannot live with their present salaries. The cost of living is increasing enormously every year, and you don't know how much more it costs to live in such isolated places as we have here. We have good agents and I don't see the advantage of changing. Outsiders will come certainly, but not for the same salaries; if they did it would simply be a flying visit, and they would soon return to the continent.

I humbly beg you to please consider the matter and see that our agents are sufficiently paid to enable them to live not in opulence but only decently. I know you will do your utmost to deal fairly with the staff.

We have nine telegraph stations. The following are the names of aforesaid stations and their respective agents with salaries, viz.:—

| Offices. | Position. | Staff. | Salary per Annum. |
|-----------------------------------|---------------------------|-------------------|-------------------------|
| English Bay..... | Operator..... | Fret. Cabot..... | 360 00 |
| West Point..... | "..... | Alf. Malouin..... | 100 00 |
| Ellis Bay..... | "..... | Jos. Duguay..... | 100 00 |
| S. W. Point..... | "..... | A. Lemieux..... | 480 00 |
| S. W. Point..... | Asst. operator..... | L. Lemieux..... | 180 00 |
| Salt Lake..... | Operator..... | E. Bourget..... | 100 00 |
| Shallop Creek..... | "..... | B. Bradley..... | 350 00 |
| South Point..... | "..... | E. Laprise..... | 100 00 |
| Heath Point..... | "..... | C. Hubert..... | 200 00 |
| Fox Bay (resigned) Aug 1st, 1909. | "..... | Geo. Cabot..... | 300 00 |
| English Bay..... | Gen. repairer..... | H. Malouin..... | 420 00 |
| Salt Lake..... | "..... | Jos. Bourget..... | 420 00 |
| West Point..... | Subt. operator..... | Lrz. Malouin..... | 480 00 |
| West Point..... | Dist. Superintendent..... | Alf. Malouin..... | 404 00 |

Maintenance of the line during the past twelve months, viz., from April 1st, 1909, to March 31st, 1910 amounts to \$531.80. This comprises all amounts I have had to pay, all but the salaries. There may be a few more dollars to add to this, but I cannot say the amount exactly, as I have no returns from offices below since last September, but it should not amount to more than \$20 or at the most \$30. This compares well with preceding years. Maintenance in 1909 amounted to \$1,046.14.

The whole humbly submitted.

I have the honour to be, sir,
Your obedient and respectful servant,
ALF. MALOUIN.

District Superintendent.

REPORT No. 5.

CHICOUTIMI, March 30th, 1910.

D. H. KEELEY, Esq.,
General Superintendent of Telegraphs,
Public Works Department, Ottawa.

DEAR SIR,—I beg leave to submit the following report on the government telegraph lines in Chicoutimi, Saguenay, and Charlevoix counties, for the fiscal year ending March 31st, 1910.

| <i>Chicoutimi Office—Staff.</i> | <i>Salary.</i> |
|--|----------------|
| Superintendent, J. C. Taché.... | \$300 |
| Inspector and instructor, J. D. Villeneuve.. | 660 |
| 1st operator, T. Villeneuve.. | 540 |
| 2nd operator, J. P. Rivard.. | 480 |
| Clerk, J. A. Couet.. | 180 |
| Messenger, Johnny Dubé.. | 120 |
| Repairer, Jean Fortin.. | 420 |

Inspector Art. Simard resigned on 30th June, 1909.

Inspector J. D. Villeneuve, appointed on 26th July, 1909.

Operators T. Villeneuve, and J. P. Rivard were promoted on the 26th July, 1909.

Messenger A. Gagné was replaced by messenger Johnny Dubé on 1st September, 1909.

The resignation of Inspector Art. Simard was due to ill health.

MAINTENANCE.

Line No. 13, from Quebec to Baie St. Paul, operated by the G.N.W., and from Baie St. Paul to Murray Bay, operated by G.N.W., and government. This part of the line has given a good service during the last twelve months.

Lines 13 and 21—from Quebec to Labrador.—Line No. 21, double line from Malbaie to Ste. Catherine, and from Ste. Catherine to Bersimis, on line No. 13; Bersimis, is the terminus of my section, on the north shore. The cable between Ste. Catherine and Tadousac was repaired at the beginning of July, by the ss. *Tyrian*, and a double cable was laid in case of interruption of the one which is in operation, and an accommodation office was opened at the end of the summer at the Tadousac hotel, of the Richelieu & Ontario Navigation Company, at Tadousac. At the end of May, damages were done by fire on the line between Bergeronnes and Mille-Vaches, but poles were replaced; in general the line from Baie St. Paul to Bersimis has given good service during the fiscal year.

Line No. 40, from Baie St. Paul to Chicoutimi.—This section of line is in very good working order, except between Baie St. Paul and St. Urbain, a distance of about 15 miles, where poles should be replaced.

A change in the roadway was made between La Galette and La Rivière Malbaie, in view of improving the line.

On the 16th April, 1909, a letter was addressed from Ottawa to L. A. Casgrain, Esq., manager of the Saguenay-Quebec Telephone Company of Chicoutimi, and also to Jos. Girard, Esq., M.P., House of Commons, Ottawa, stating that, in the matter

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of the application presented to the department, authorization has been given that the pole line privilege asked by the Saguenay-Quebec Telephone Company, and La Cie. Co-opérative Téléphonique du Lac St. Jean, of putting wires on the government telegraph poles between Chicoutimi and St. Paul's Bay or Murray Bay may be granted upon certain conditions hereinafter mentioned:

'The company or companies will, for a rental of \$4 per mile per annum, severally or conjointly paid by them to the Department of Public Works, be permitted to put their wires on the government poles, using cross arms (conjointly where both companies are concerned) for the purpose, and placing them in such a way as to preserve the telegraph wire or wires from interference, and sufficiently high above ground to carry the telephone wires clear of all chance of obstruction to traffic along or over the roadways, any required overhauling or strengthening of poles to be at the expense of the company or companies, without cost to the government, and the rent of \$4 per mile for the length of line occupied will be payable from the time the wires are first put on. The permit, on these conditions, will apply to any part or parts of the government line between Chicoutimi and St. Paul's Bay or Murray Bay. The telephone wires so put upon the poles will be kept in proper order by the owners without cost to the government and shall be renewable at the pleasure of the Hon. the Minister of Public Works.'

The Saguenay-Quebec Telephone Company has accepted these conditions, and on the 17th of August last, the men of the said company started the work at a point of the line called 'La Shop à Petit,' near St. Alexis; for a distance of 30 miles the company's wire is on the government poles, and according to the manager of the company they have expended about six hundred dollars to put this part of the line in good condition.

On the 1st of March, I received instructions to shift the line in La Savanne road, which work is going on.

In general, this line has given first-class service.

Line No. 41.—Line No. 41, Baie St. Paul to Ste. Agnes, and Murray Bay, in good condition.

Line No. 42.—Line No. 42, from Chicoutimi to Peribonka, this section of the line has given good service.

Line No. 44.—Line No. 44, from Baie St. Paul to Petite Rivière St. François, in good condition.

Line No. 45.—Line No. 45, from Ste. Anne to Lac Clair, in good condition.

Line No. 46.—Line No. 46, from Baie St. Paul to St. Placide, in good condition.

Line No. 48.—Line No. 48, loop line, Ste. Anne to St. Ambroise, good condition.

Line No. 52.—Line No. 52, loop line, from Taché to Alma, in good condition.

Line No. 39.—Line No. 39, Chicoutimi to Ste. Catherine, in good condition.

Line No. 50.—Line No. 50, from Chicoutimi to Tadousac, where the line continues on No. 13 to Labrador, as far as my section is concerned, the line has given a good service.

CONSTRUCTION.

An iron tower 80 feet high from the pier was erected by Messrs. Geo. Bergeron & Edmond Tremblay, at a cost of \$1,290. This tower was erected on the south shore of the Saguenay river at Chicoutimi, to shorten the distance from Chicoutimi to Ste. Anne across the Saguenay river.

The sum of \$37.49 was expended in connection with the erection of the said tower.

A camp was constructed between Anse au Cheval and St. Catherine for the use of the repairer—\$49.50. Total expenditure, \$1,376.99.

REPORT 5a.

OFFICE OF THE DISTRICT SUPERINTENDENT,
LONG POINT OF MINGAN, Q., 1st April, 1910.

D. H. KEELEY, Esq., General Superintendent,
Government Telegraph Service,
Ottawa, Ont.

DEAR SIR,—I beg to submit the following report of the Government North Shore Telegraph Line from Bersimis eastward to Chateau Bay, for the year ending 31st March, 1910. The whole distance (1,075 miles) has been put in satisfactory condition. Four line inspectors (divisions of about 200 miles each) with their gangs made as usual the yearly overhauling and clearance of the line from Pointe-des-Monts to Chateau Bay. Also renewal or repairing, from one end to the other, of bridges, camps, shelter huts, barges, canoes, poles, braces, etc. Moreover, the other regularly appointed linemen also maintained their sections in working condition, from Rivière-Colombier (16 miles west of Bersimis) to Pointe-des-Monts, and from Betchouan (20 miles east of Esquimaux-Point) to Red Bay.

On 12th February, 1907, by special request, I mailed to the department a list of all the offices, intermediate distances, names of agents, operators, inspectors, repairers, salary, date of appointment, date of birth, nationality and memo on this district.

You will also find here attached a corrected list of offices, etc. (put on pp. 23-25 of your general report for the fiscal year ended March 31st, 1909) with my memorandum of omissions, additions and other informations to 31st March, 1910.

Number of agents, etc.:—

| | |
|---|-------|
| Agents, operators and assistant operators.. | 86 |
| Division inspectors.. | 4 |
| Section repairers.... | 25 |
| | <hr/> |
| | 115 |

NEW OFFICES, OFFICE CHANGES, ETC.

At Manicouagan, the accommodation office was closed on 28th May, 1909.

At English Point, the accommodation office was closed for summer on 30th May, 1909, and at Egg Island the accommodation office was re-opened for winter on same date.

At Harrington Island, the telephone office was opened (in hospital kept by Doctor Hare) and connection made with Harrington telegraph office, on 14th June, 1909.

At Red Bay, telegraph office removed to Mr. George Moore's residence, himself taking charge as operator on 1st July, 1909, replacing his sister Sarah, who is now Mrs. Yelman.

At Salmon Bay (6 miles from Bonne Espérance office and down St. Paul's river) small loop-line built and everything ready, on 4th July, 1909. Miss Mary Chevalier, operator at Bonne Espérance station, being in very poor health, could not go to take charge of Salmon Bay new temporary office for the summer months, as it had been arranged.

Long Point-Anticosti cable repaired on 29th July, 1909. Trouble was near Anticosti shore.

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Between Red Bay and Chateau Bay (a distance of 30 miles) considerable line repairs made on that section of line and communication re-established at this eastern end office, with the western ones, on 5th August, 1909.

At Moisie East, the accommodation office was closed on 31st August, 1909, and will be re-opened in spring 1910.

At Blanc-Sablon, the office was closed on 5th October, 1909, and will be re-opened in spring 1910.

11th October, 1909.—Anticosti cable broken about 3 miles from Long Point, off Mingan shore.

12th October, 1909.—At Bonne Espérance the office will remain closed during next winter on account of Miss M. Chevalier's illness.

20th October, 1909.—Long Point-Anticosti cable repaired.

Construction of Clarke City loop-line commenced 30th September and completed on 9th November, 1909.

I will abstain in this statement, to give you certain informations, recommendations and suggestions, as it has already been done by correspondence, and knowing it is a yearly, brief general report that is particularly required.

I have the honour to be, sir,

Your obedient servant,

E. H. TETU,

District Superintendent.

[*Note.*—List of staff officers, etc., will be found in the tabular statements preceding the reports.]

REPORT 6.

ST. JEAN, ISLAND OF ORLEANS, P.Q.. March 31, 1910.

D. H. KEELEY, Esq., General Superintendent,
Government Telegraph Service,
Ottawa.

DEAR SIR,—I have the honour to submit herewith my annual report on the operation of the lines, cables and telephones of the Grosse Ile Quarantine system, &c., under my charge, comprising land lines and submarine cables, from l'Ange Gardien, County of Montmorency, to Ile aux Coudres, County of Charlevoix, inclusive, for the fiscal year ending the 31st March, 1910.

During the winter of 1908-9, the three submarine telegraph cables were broken by ice. The cable between Crane Island and Montmagny was broken on the 12th December, 1908, and was repaired by me in May 1909, but not having enough cable on hand to make a complete joint, this cable was finally repaired by the cable ship *Tyrian* in July, 1909. Two miles of this cable was carried away, and it was impossible to locate it.

The cable connecting St. François, Island of Orleans, with Ile aux Reaux was interrupted near the last mentioned place in April, 1909, which I repaired in May, 1909, adding 500 feet of cable to replace that carried away by ice.

The cable from St. François to Bay St. Paul was broken in December, 1908, and was repaired by the cable ship *Tyrian* in September, 1909.

As in past years, many poles of the land lines (about 25) were broken off level with the surface of the ground either by storm, ice or trees falling on these poles,

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all being replaced at once. It would be advisable for me to have a number of these poles on hand to replace others which become useless, owing to their small size, becoming too short in certain places when replanted.

The telegraph and telephone line on the Island of Orleans is in bad shape and works very badly, owing to interference by trees, &c., on almost its entire length. I procured the services of two competent men with a wagon to do general repairs to this line in July, 1909, after which repairs these lines gave very good service.

The office sets at St. Petronille and St. François having become defective through lack of care and the damp state of these offices, I repaired them and placed them in good order.

Apart from the interruptions mentioned above, the lines under my charge have given good service and the agents and operators give good care to the duties of their respective offices. The agent at Grosse Ile is not included in this number, as the reports from that office are not sent to me.

Under special instructions, I proceeded to construct a telephone line from the parish of St. Bridget of Laval, County of Montmorency, to Notre Dame de Beauport, in the County of Quebec, a distance of 15 miles. This line connects with the Bell Telephone Company in Beauport and was completed the 23rd November, 1909.

I dare reiterate the request, submitted in previous reports, to be given a suitable small steamboat to be used in connection with cable repairs as well as land lines in my division so as to enable me to give the best possible service on these lines and cables.

Following are details covering length of lines, cables, names of agents, salaries, &c., &c.

[See tabular statements preceeding reports*].

I think it advisable to give here, the interruptions in the cables during the past winter and the dates on which these interruptions took place.

Cable, Bay St. Paul to St. François, September 24, 1909.

" Montmagny to Crane Island, December 12, 1909.

" l'Ange Gardien, St. Pierre, March 2, 1910.

" Grosse Isle, St. François, March 6, 1910.

" Telephone to l'Ange Gardien, February 10, 1910.

I have the honour to be, sir,

Your obedient servant,

J. P. POULIOT,

District Superintendent.

REPORT 7.—PELEE ISLAND.

LEAMINGTON, Ont., April 7th, 1910.

D. H. KEELEY, Esq.,

General Superintendent Government Telegraph Service,

Ottawa, Ont.

DEAR SIR,—In the matter of the Pelee Island Telephone System for the term from March 31st, 1909, to March 31st, 1910, I beg to report as follows:—

1. The line on the island is in good working order and repair, except a short piece near the north end lighthouse, where some trees have been used as temporary poles, where some of the line poles have been washed out, and as suggested in my

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former report it will be better to shift this portion a little eastward to a new dyke which was thrown up last season through a portion of the lighthouse marsh.

Three instruments were installed on the island on April 8th and 9th, 1909, at Dr. Van Epps' residence, Dr. Piritte's residence and at the hotel, all near the West Dock office and a fourth instrument was installed at McCormick's store near the North Dock (Scudder Dock) on October 28th, 1909. I afterwards removed the instrument that had been installed at Dr. Piritte's residence, as he had left the island about the beginning of autumn.

2. The mainland line to the cable landing and also to Point Pelee is working all right. The latter will require some attention this season in replacing some of the old poles with new ones, of which there is enough on hand. On June 23, I installed an instrument at Baird's house on Point Pelee near Tilden's office and on March 25th, 1910, installed an instrument at Jackson and Moss' summer residence on Point Pelee, near the site of the old Club House station, and two and a half miles north from Tilden's. We had transformers or repeating coils placed on both the island and Point Pelee branches of the line on the mainland during the past season. I also removed the instrument from the Delaurier premises near the Leamington Dock on the mainland, as Delaurier had sold out and removed, and under an agreement between the town corporation and the Bell Telephone Company, a free instrument is placed by the company at the dockmaster's residence.

3. The cable worked all right and satisfactorily after being repaired in May and June, 1908, until December 16th, 1909, when it ceased working. I have not been able to ascertain the cause, but think it probable that the heavily packed ice which prevailed at the time may have broken or damaged it, and I am now, as authorized by you, getting matters in readiness to examine and repair if possible, as soon as the lakes are thoroughly clear of ice and the weather seems settled.

I herewith submit a list of the offices, operators or agents and rates of commission or salary and summary of messages sent and received from March 31st, 1909, to March 31st, 1910. [See tabular statements preceding reports].

Yours most respectfully,

JOHN McR. SELKIRK,

District Superintendent.

REPORT 8.

EDMONTON, ALBERTA, April 2, 1910

D. H. KEELEY, Esq.,

General Superintendent.

Government Telegraph Service,
Ottawa, Canada.

DEAR SIR,—I beg to submit herewith my annual report of the Northwest Lines to March 31, 1910, covering conditions, repairs, changes in staff and construction.

Since my last report, my own office has been removed from Qu'Appelle, Saskatchewan, to Edmonton, Alberta, owing to the extension of our lines northward into the Peace River country, giving me a central point from which to work. I am thus enabled to keep in constant touch with the construction of the Edmonton-Peace River extension, as also with the offices on the Saskatchewan division.

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CONDITIONS GENERALLY—SASKATCHEWAN DIVISION.

The usual number of new poles were put in on the different sections to replace those lost owing to the natural decay of old poles; the taking of the line from fields and placing it on the highway, and from prairie fires and lightning. During the spring and summer, lightning and prairie fires were unusually severe, and caused more than the ordinary trouble, but owing to the watchfulness and energy of the employees along the line, the delay to business was kept at a minimum, with but very few exceptions. In cases of wire trouble we have three different points, which, owing to the courtesy of the Canadian Pacific Railway Telegraph Company, we can use as repeating stations, viz: Q'Appelle, Saskatoon and Edmonton, and at no time is business for outside points delayed. As stated in my last year's report our line is being fenced in by many settlers who are purchasing land or taking up homesteads along the route of our line. A number of these are requesting that the line be removed from their fields. We have been complying with their requests and placing the line on the highway. There will be considerable of this work to be done this coming summer. It will also be necessary to run a considerable number of poles at different points along the whole route between Q'Appelle and Edmonton, owing to decay and the ravages of prairie fires. Many of the poles have been reset so often that they are now too short to be of any further use.

EDMONTON-PEACE RIVER SECTION.

During the year just closed, construction on this line has been completed for a distance of 76 miles northwest from Athabasca Landing, and an office opened at Mirror Landing, a point six miles from the end of construction. The right-of-way has been cleared and poles distributed along the route for an additional 100 miles. This will bring us to Lesser Slave Lake settlement, at the west end of Lesser Slave Lake. Some material, such as wire, and insulators, is also on the ground, in readiness for construction as soon as spring opens, and funds available. The office, which was opened at Mirror Landing, while not a large revenue producer, was found to be of very great service to the people in the north, and especially to those who were travelling to and from Grand Prairie and other northern settlements. As construction advances, I would suggest the opening of an office at the east end of Lesser Slave Lake, when the office now at Mirror Landing would be useful only as a summer office. Mirror Landing is the point at which steamers transfer their freight and passengers for the northern country over a sixteen mile portage to connect with other steamers. So that if we have an office at the east end of Lesser Slave Lake, Mirror Landing office might be closed for the winter months. I would also suggest that offices be opened at Lesser Slave Lake settlement, at the west end of Lesser Slave Lake—65 miles further on—and at Peace River Crossing, when those points are reached.

Many settlers living in the north, and also new settlers going into that country, have expressed themselves very strongly as to the need and usefulness of this line.

LLOYDMINSTER (LOOP) LINE.

The reconstruction of this line was completed in November last. The point where it connects with the main line is at old Fort Pitt, on the Saskatchewan river, 15 miles west of where the old loop connected with it. The new line is well built, tamarack poles being used, and follows the highway. This loop is 29 miles long, necessitating the use of 58 miles of wire and material. There should not be any wire trouble on this portion of the line for some years. On the completion of this loop last fall, I had the 44 miles of wire which was in use on the old loop, and which was

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in good order, reeled and shipped to Edmonton, together with the insulators. This material will be used on construction of the Peace River line.

MOOSEJAW-WOOD MOUNTAIN DIVISION.

Many poles on this line are in very bad condition and will need renewing this year. An appropriation was made two years ago to have this line put in good condition, but owing to the delay of the contractor in forwarding poles, the work could not be completed. The balance of the appropriation lapsed and was not revoted. Lineman Brown has, however, kept the line in fair working order, so that but little delay to business has occurred during the year.

TELEPHONE LINES.

The telephone lines running from Edmonton to St. Albert and Stoney Plain, are being largely reconstructed by the Alberta Provincial Government Telephone Service. Some parts of the line had to be changed and many of the old poles renewed. These lines include the following offices:—Winterburn, Stonyplain, Spruce Grove, Stonyplain Centre, Stonyplain Station, St. Albert, Raye, Rivière qui Barre and Alexandre.

FORT QU'APPELLE—LEBRET-FILE HILLS LINE.

This line has been kept in good working order throughout the year, and has given perfect satisfaction.

BATOCHÉ-DUCK LAKE DIVISION.

The greater portion of this line is running through the fields of settlers and must be moved to the highway. The poles are old, rotten and useless and new poles will have to be used. I have let a contract for 175 new poles for this work, as authorized, and will have the line put in good order as soon as weather permits.

ANDREW-WHITFORD LINE.

This line has been kept in good working order. The instrument at Whitford was moved to the new post office, one mile east of the old office, where it connects with the Alberta Provincial Telephone line.

SADDLE LAKE-INDUSTRIAL SCHOOL LINE.

This line has been working satisfactorily throughout the year and is in good order.

KAMSACK—INDIAN AGENCY LINE.

In August, during a severe electric storm, both telephones were burned out. These were replaced by two new instruments sent by the department. With the exception of this short delay the line has been in good order.

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BUILDINGS AND REPAIRS.

During the year it was found necessary to have the following work done, which was duly authorized by the department:—

| | |
|--|----------|
| Repairs to cellar and building at Battleford. | \$ 79 10 |
| Repairs and painting to building at Onion Lake. | 135 00 |
| Repairs to cellar and foundation of building at S. Humboldt. | 60 00 |
| New stable and well at Saddle Lake. | 498 00 |
| Repairs to building at Pakan (Victoria). | 210 00 |

ADDITIONS AND CHANGES IN STAFF.

D. Sutherland appointed lineman at Fort Qu'Appelle in place of J. W. Wilson (deceased).

J. T. Dewan, Battleford, appointed lineman in place of Wm. Dewan, resigned.

Agent A. Bowtell transferred from Onion Lake to Lloydminster.

Agent H. McCleneghan transferred from Lloydminster to Onion Lake.

Sub-agent Mann, transferred from Moose to Lloydminster, as lineman.

J. A. McCartney appointed sub-agent at Moose, in place of G. G. Mann, transferred to Lloydminster.

H. Hunt, acting lineman at Qu'Appelle, transferred to Edmonton as acting lineman.

T. Boothe appointed messenger at Edmonton.

E. R. Lossing, acting agent at Limerick, vice C. A. Lindred, resigned.

G. E. MacLeod, chief lineman, Edmonton, being kept at end of construction.

I have the honour to be, sir,

Your obedient servant.

ROBT. C. MACDONALD,

District Superintendent.

[Note.—List of staff offices, etc., will be found in the tabular statements preceding the reports].

REPORT No. 9.

OFFICE OF THE GENERAL INSPECTOR (SASK., ALTA. AND B.C.)

EDMONTON, ALTA., March 31st, 1910.

D. H. KEELEY, Esq.,
General Superintendent,
Ottawa.

DEAR SIR,—I beg to submit herewith a report covering the lines in my inspectorate, and bringing the report up to March 31st, 1910.

On May 1st, 1909, my headquarters were transferred from Kamloops, B.C., to Edmonton, Alta.

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GOVERNMENT TELEGRAPH SERVICE.

NORTHWEST LINES.

| Location of Lines. | Points Connected. | Year. | Length of Lines. | | | Number of Offices. | Messages Sent. |
|--------------------|---------------------------------------|--------|------------------|---------|--------|--------------------|----------------|
| | | | Land Lines. | Cables. | Total. | | |
| | | | Miles. | K'ts. | | | |
| Northwest. | Qu'Appelle—Edmonton | 1883 | 671 | ..... | 671 | 16 | |
| " | Edmonton—Athabasca Landing | 1904 | 98 | ..... | 98 | 2 | |
| " | Athabasca Landing—Mirror Landing | 1909 | 70 | ..... | 70 | 2 | |
| " | Moosejaw—Wood Mountain | 1885 | 90 | ..... | 90 | 3 | |
| " | Wood Mountain—Willow Bunch | 1904 | 40 | ..... | 40 | 2 | |
| " | Edmonton—Indian Ag. & Stoney Plain | 1904 | 24 | ..... | 24 | 5 | |
| " | Edmonton—St. Albert | 1887 | 9 | ..... | 9 | 3 | |
| " | St. Albert—Que-Beche and Alexandre | 1902 | 27 | ..... | 27 | 3 | 19,237 |
| " | Duck Lake—Batoche | 1902 | 9 | ..... | 9 | 3 | |
| " | Duck Lake—Indian Agency | 1902 | 3½ | ..... | 12½ | 3 | |
| " | Lloydminster (loop) near Onion Lake | 1909 | 29 | ..... | 29 | 1 | |
| " | Pakan (Victoria) Andrew & Whitford | 1904-5 | 17 | ..... | 17 | 2 | |
| " | Lipton (loop) near Fort Qu'Appelle | 1906 | 1 | ..... | 1 | 1 | |
| " | Fort Qu'Appelle—File Hills Indian Ag. | 1907 | 27 | ..... | 27 | 4 | |
| " | Saddle Lake—Industrial School | 1900 | 6½ | ..... | 6½ | 1 | |
| " | Kamsack—Indian Agency | 1907 | 6½ | ..... | 6½ | 2 | |
| Total | | | 1,128½ | ..... | 1,128½ | 47 | |

QU'APPELLE-ATHABASCA LANDING SECTION.

During the past year, good service has been maintained on this division. There have been the usual unavoidable interruptions, due to lightning, prairie fires, and other natural causes, but no serious delays to business have resulted, owing to the prompt action taken by employees. All along the route traversed by the line, it is becoming increasingly difficult to avoid delays in repairing, owing to the rapid settlement, and consequent fencing in of the line, which, having been erected prior to surveys, was built to reach its objective in the most direct way possible. As a consequence, linemen are frequently compelled to leave their horses, and proceed on foot through the fields, in order to locate trouble, thus necessarily taking longer than if the line were on the highway. Wherever practicable, however, this condition is being overcome by removing the line to the travelled roads. I would recommend that a certain amount of this removal work should be arranged for each season until completed.

A number of new poles will be required on each repairing section, to replace those destroyed or decayed.

The poles on the loop connecting Lloydminster with the main line having fallen into decay, a new loop, 29 miles in length, was completed last November, thus removing a frequent source of trouble to the working of the line.

A new stable was erected at Saddle Lake to replace the original stable, the walls of which had rotted. A well was also dug there. Necessary repairs were made to our buildings at Pakan, Onion Lake, Battleford, and South Humboldt. The various buildings owned by the department are now all in very good condition.

I much regret to report the death of Lineman J. W. Wilson, which occurred in November last. Mr. Wilson had been in the service for many years, and had proven himself a useful and efficient employee.

A number of appointments, and changes in staff are shown elsewhere.

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The books of the various offices are well kept, and returns are forwarded promptly to the superintendent, in these respects comparing favourably with any telegraph service of which I have knowledge.

MOOSEJAW-WILLOW BUNCH SECTION.

A large number of poles will be required this season to replace losses from fires, lightning and natural decay. The country between Moosejaw and Wood Mountain has virtually all been taken up by homesteaders during the past two years, and the work of keeping the line in good order has been difficult. Lineman Brown, stationed at Wood Mountain, has a beat extending 40 miles east to Willow Bunch and 100 miles north to Moosejaw. The ploughing of the land along the line increases the difficulty of the work, and it may be found advisable to place a lineman at some point midway between Moosejaw and Limerick. Lake Johnston, 35 miles south of Moosejaw, would probably be the most suitable point.

BATOCHE—DUCK LAKE SECTION.

The poles on this line having been re-set so often as to be no longer capable of supporting the wire, a contract has been let for new poles to re-construct the line 6½ miles. The route will be changed, so as to remove it from farms, and place it on the highway throughout.

The offices at Duck Lake and Batoche receive good attention, books are well kept, and returns forwarded promptly.

PEACE RIVER EXTENSION.

This line was last season carried to a point 76 miles north of Athabasca Landing, an office being established at Mirror Landing, on the Athabasca river, six miles from the end of construction. The right of way was also cleared for an additional 100 miles, to the west end of Lesser Slave lake, and poles distributed in readiness for this season's operations. Should the programme of work for this season be carried out as proposed, the line should, by fall, reach Peace River crossing, about 250 miles northwest of Athabasca Landing. The principal settlements beyond Athabasca Landing are at east end Lesser Slave lake, 115 miles, west end Lesser Slave lake, 75 miles, and Peace River crossing, 90 miles, the distance given being approximate.

Operators and linemen should be stationed at each of these points, as also at Athabasca Landing.

TELEPHONE LINES.

The various telephone lines, Kamsack Indian agency, Duck Lake Indian agency, Fort Qu'Appelle Indian Agency, File Hills, Andrew-Whitford, Saddle Lake industrial school, are all in good working order. The Edmonton-Stonyplain, and Edmonton-Alexandra lines are being operated by the provincial government, in connection with their lines.

BRITISH COLUMBIA.

GOLDEN WINDERMERE TELEPHONE LINE.

This line is working satisfactorily. A number of poles will be required to replace others which have rotted, and are too short to re-set. This line is efficiently looked after by Mr. G. E. Sanborn, who is stationed at Golden.

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KAMLOOPS-VERNON TELEPHONE LINE.

As stated in my last report, many new poles are required on this line in order to place it in a satisfactory working condition. This is true of the whole section between Kamloops and Princeton, and unless action is taken at once, continuous trouble must inevitably result. Great numbers of poles along this route are rotten, or partially so, so that a tree falling on the line creates great havoc. Superintendent Stevens considers that the butts of all new poles should be treated with a preservative, and judging from the results on poles so treated, between Penticton and Kelowna, I consider that the life of a pole is considerably lengthened thereby. Those sections of the line between Kamloops and Louis Creek, Penticton and Vernon, also Vernon to Lumby, are in excellent condition.

Since the date of my last report, I have not been over the lines under the jurisdiction of Superintendent Henderson.

I have the honour to be, sir,

Your obedient servant,

J. S. MACDONALD,

General Inspector.

REPORT No. 10.

VICTORIA, B.C., April 2nd, 1910.

DEAR SIR,—I have the honour to submit the annual report of the telegraph and telephone lines under my charge for the year ending 31st March, 1910.

VICTORIA AND CAPE BEALE TELEGRAPH LINE.

A satisfactory service has been maintained on this line during the year, fewer interruptions and of lesser duration, partly on account of the mild winter and partly from the fact that all the sections on the line have been thoroughly overhauled during the summer as far as the condition of the line would permit. I would repeat the recommendation made last year that wherever possible the line should be placed on the new life-saving trail now being constructed by the Marine and Fisheries Department, removal of line from north side of San Juan mountain, near Port Renfrew to the south side, wherever possible taken out of the bush and put on the beach, a large portion of the line between Victoria and Otter point should be repoled. The portion near Lost Creek, on both sides, should be placed along the beach, avoiding two of the very worst hills on the line and the creek crossed by a heavy steel wire on high poles. Nearly all the footbridges in the middle and eastern sections of this line were washed away by extremely high water and floods, and while a number have been permanently repaired and some temporarily, these will all require to be put in thoroughly safe condition during the summer. The fish traps, logging camps, &c., were again given telephone connection with the nearest offices.

ALBERNI AND CAPE BEALE TELEGRAPH LINE.

The Canadian Pacific Telegraph Company's line repairers are responsible for the maintenance and repairs of this line.

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ALBERNI AND CLAYOQUOT TELEGRAPH LINE.

Considerable difficulty was found in maintaining communication on the line during the winter on account of the poor state of the poles.

Very considerable repairs will require to be made to this line during the coming summer, the major portion of the poles from Franklin creek on the Alberni canal to Clayoquot are decayed and unsafe to climb. The line should be transferred from these to green trees along the water edge instead of as at present from a few yards to a hundred yards in the bush. The portion of this line from New Alberni to Franklin creek is maintained and repaired by the Canadian Pacific Railway Telegraph Company's line repairer, and I regret to report that constant and serious complaint is made by our line repairer on the next section, that such is poorly done, and that on more than one occasion he has covered his own section and continued up the canal and found the break or ground on the Canadian Pacific Railway section. If our line is to be improved as suggested above, the section from Franklin creek to New Alberni will also require to be overhauled as when an inspection was made of this portion by my assistant, Mr. J. G. Brown, last August, it was in a deplorable condition. I would suggest that in a densely wooded section of the country, subject to so much rain, wind and snow, that the three wires now on the one pole be put on cross arms, or our Alberni and Clayoquot line be put on poles by itself and maintained by our own line repairer. I would again strongly urge that the line repairers on this section should be supplied with motor launches both as a means of repairing the breaks quickly, and as a means of safe travelling; the cost would be about six hundred dollars (\$600) each. The linemen have purchased launches for themselves, as it was found impossible to perform their work with a row or sail boat.

NANAIMO AND COMOX TELEGRAPH LINE.

From Nanaimo to Campbell river, this line which has been of very great satisfaction to all who have occasion to do business, is now in very good condition, only one portion requires re-poling.

DENMAN AND HORNBY ISLAND TELEPHONE LINE.

This line until recently was considered an integral part of the Nanaimo & Comox line, is now treated as an independent line with offices at Union bay. Denman island (2) and Hornby island. The line is not subject to many interruptions, being built on a trunk road and the islands lay to the east of Vancouver island, which protects them from the prevailing winds. Mr. Thos. Hudson, our line repairer on the northern section of the Nanaimo and Comox line, with headquarters at Union bay, exercises a general oversight of this line, temporary repairs being made by parties living on the islands. This line will require a general overhauling this coming summer.

VANCOUVER, SALT SPRING, PENDER, MAYNE AND GALIANO ISLANDS TELEPHONE LINE.

This line has worked very well except when temporary repairs were poorly made once or twice by local parties. It was also unfortunate that the cable between Galiano and Mayne island parted during this winter, while some inconvenience might be suffered by the few settlers on Galiano island; they have been able, however, to enjoy the benefit of the telephone by crossing the passage between the islands, a distance of about a mile. A general overhauling of the line will be made during the coming summer, phones inspected and batteries, etc., renewed.

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NANAIMO AND GABRIOLA ISLAND TELEPHONE LINE.

This line was completed a year ago. phones installed at North Gabriola, Centre Gabriola and South Gabriola on Gabriola island, also at Nanaimo river, near the point where the cable leaves Vancouver island for Gabriola island and at Nanaimo in the office of the British Columbia Telephone Company, whereby islanders have connection with that company's long distance system. The line has worked very satisfactorily, being much appreciated by the settlers. Temporary repairs are executed by the settlers and an expert lineman conversant with repairs to phones, etc., will have to overhaul the whole line yearly or as often as necessary. Very little repairs have been required so far and mostly from falling timber.

GOLDEN AND WINDERMERE TELEPHONE LINE.

An excellent service has been maintained on this line throughout the year, many poles have been reset and still a number require to be attended to.

VICTORIA AND METCHOSIN TELEPHONE LINE.

Operated and maintained by the British Columbia Telephone Company.

Note.—List of staff, offices, etc., will be found in the tabular statements preceding the reports.

TOTAL NUMBER OF MILES OF LINES, &C., IN OPERATION AT MARCH 31, 1909.

| — | Miles | Land Lines. | Cable. | No. of Offices. | No. of Operators. | No. of Line Repairers. | Messengers. |
|--|-------------------|-------------------|---------------|-----------------|-------------------|------------------------|-------------|
| Victoria—Cape Beale..... | 118 | 118 | ..... | 12 | 6 | 8 | 1 |
| Alberni—Cape Beale..... | 57 | 57 | ..... | 2 | 2 | Repairs made by C.P.R. | |
| Alberni—Clayoquot main line..... | 86 $\frac{7}{10}$ | 86 $\frac{7}{10}$ | ..... | 7 | 6 | 4 Government. 1 C.P.R. | |
| Alberni—Clayoquot Sechart Branch..... | 9 | 9 | ..... |  |  |  |  |
| Alberni—Clayoquot Mosquito Harbour Branch .. | 10 $\frac{1}{2}$ | 10 $\frac{1}{2}$ | $\frac{1}{2}$ | | | | |
| Nanaimo—Comox..... | *90 | 90 | ..... | 12 | 12 | 2 | 1 |
| Parksville—Alberni Branch (N. & C.)..... | 30 | 30 | ..... |  |  | Repairs made by C.P.R. | |
| Denman—Hornby Isd..... | †18 | 11 | 7 | | | | |
| Courtenay—Campbell R.... | 40 | 40 | ..... |  |  |  |  |
| Golden—Windermere..... | 90 | 90 | ..... | 4 | 5 | 1 | |
| Vancouver Island & Salt Spring Pender, Mayne & Galiano Islands Telephone Line..... | 67 | 60 | 7 | 6 | 16 | On commission. | |

Length in question heretofore stated to be 81 miles.

† Length in question heretofore stated to be 14 miles land line, 2 miles cable.

I have the honour to be, sir,

Your obedient servant,

WM. HENDERSON.

Supt. Govt. Telegraphs.

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REPORT No. 11.

OFFICE OF THE DISTRICT SUPERINTENDENT.

SUMMERLAND, B.C., March 17th, 1910.

D. H. KEELEY, Esq.,
General Superintendent.
Ottawa, Ont.

DEAR SIR,—I have the honour to acknowledge your communication March 3rd, and herewith beg to submit my report covering the lines under my supervision up to March 31st, 1910.

KAMLOOPS TO LOUIS CREEK.

This line, opened for business in December, 1908, is still in good condition. This line has not cost anything for repairs since it was opened, which shows the wisdom of good substantial construction at the beginning, with the butts of poles treated with a good preservative, all of which materially lengthens the life of the pole, and reduces to a minimum the cost of upkeep.

KAMLOOPS TO NICOLA AND LOWER NICOLA.

This line should be rebuilt at once. Since the opening of spring with the consequent going of frost from the ground, poles falling, and thus bringing the line into trouble, are matters of daily occurrence.

These poles were reset October, 1905, butts being treated with carbolineum. This experience teaches that it is useless to try and preserve a pole after it is dead. I think the line was built in 1900, which shows that the treatment to the butts did not increase the life of pole. In contradistinction to this I would point out that the section from Kelowna to Penticton, built at the same time as the Kamloops-Nicola section, was being reset, and the butts treated with the same preservative, is still in good condition, and the cost of maintenance so far as resetting of poles is concerned, has been nil. I had occasion a few days ago to examine one of these poles, and found that even the first stages of decay had not set in. One must by this be forced to conclude that the butts must be treated when green.

NICOLA TO HEDLEY AND HEDLEY TO PENTICTON.

As restated in former reports, when these sections were first built, about two-thirds of the line was strung upon trees. What poles were used are now falling rapidly, and to reset them would be useless. These first poles should now be replaced with good poles, and butts preserved. As the railway is now built as far as Princeton, preservative can be shipped to that point and distributed.

Estimate for rebuilding Kamloops to Nicola and Lower Nicola, and for rebuilding the parts where the first poles were used between Nicola and Hedley, and Hedley and Penticton has already been submitted in previous report. If this work is to be done this year (and I do not see how it can be delayed) I would respectfully submit that immediate work be begun. Falling timber between Aspen Grove and Princeton, a distance of sixty miles, coupled with heavy fall of snow, has made the operation of this section of the line extremely difficult this past winter.

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The exchange at Princeton was opened for business November, 1909, and appears to have given the people of this town the accommodation they required, in order to satisfy them. Everything appears to be running to the satisfaction of all concerned at this point, where in the past so much trouble and friction was continually in evidence.

PENTICTON TO KELOWNA.

Nothing need be said in regard to this section, except what has been said by way of reference under Kamloops to Nicola section. This section needs no attention except as to general upkeep. I would expect the poles on this section to last at least another five years and perhaps longer.

KELOWNA TO VERNON.

Work upon the rebuilding and stringing of second circuit in metallic copper was completed in October last year, and is giving entire satisfaction. The old line is used for telegraph purposes, alone. I have received several congratulatory statements from our patrons in the lower part of the Okanagan valley between Hedley and Kelowna, expressing their appreciation of the improvement in holding conversations with Vernon. This is due to using the copper conductor, and getting away from gravity battery which was constantly on the line, when it was being used in its dual capacity as telephone and telegraph.

VERNON TO LUMBY.

This line, built in October, 1907, needs no attention. The line was well built, butts being preserved in the usual way with carbolineum.

Subjoined I beg to submit statement of staff, salaries paid, and revised list of offices to date.*

All of which is respectfully submitted.

C. S. STEVENS,

Superintendent.

**Note.*—These lists will be found in the tabular statements preceding the reports.

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REPORT No. 12.

OFFICE OF THE SUPERINTENDENT,

VANCOUVER, B.C., June 3rd, 1910.

D. H. KEELEY, Esq.,

General Superintendent Government Telegraphs,

Ottawa, Ont.

DEAR SIR,—I beg to submit herewith my annual report covering the operation of the Yukon Telegraphs for the fiscal year 1909-10:—

MAIN LINE—ASHcroft TO BOUNDARY, BELOW DAWSON.

The working conditions on the main line during the past year have been excellent, little difficulty was experienced in maintaining almost constant communication, the interruptions being comparatively few, and of but short duration. The usual annual general repairs and overhauling of the line during the summer months were performed by the line foreman, assisted by the local linemen on their respective sections. Between Hazelton and Third Cabin it was found necessary to employ a small gang to re-corduroy a portion of the trail and renew several bridges. This gang also reset and renewed poles along this section where required. On the Atlin-Forty Mile division, the hoped for increase in business over the preceding year failed to materialize, on the contrary business has decreased steadily, owing to the departure from Dawson and Atlin of many of the former individual mine workers, and others whose business interests were affected by the decrease in population, but with favourable prospects for quartz mining, which are already in sight, the expected revival in business cannot much longer be delayed.

While the business on the northern section has been decreasing, the southern section from Atlin to Ashcroft, and from Hazelton to Prince Rupert has been increasing by leaps and bounds, so much so, that the comparative statement attached, shows an increase for the past year on the entire system of \$22,190.60, and over 19,000 messages. This increase is mainly due to rapid settlement at Prince Rupert, along the Skeena river, through the Bulkley and Nechaco valleys, and in the Fort George district, and to the opening up of this country by the construction of the Grand Trunk Pacific railway.

The influx of settlers and land seekers has scarcely more than begun. With the month of April, and continually throughout the summer, a steady stream of new comers into these districts is assured.

The local lines in the Cariboo district, and the main line from Ashcroft to Hazelton and Prince Rupert are even at present almost taxed to their capacity.

HORSE FLY BRANCH.

Two men were employed for two months on this branch, assisting the operator and linemen, re-setting and renewing poles and otherwise doing general repairs. The line is now in fairly good condition, but a majority of the poles will require renewing in the near future. A telegraph line twenty miles in length was constructed by the Quesnel Hydraulic Gold Mining Company from their headquarters, named Hydraulic, to connect with our line at Quesnel Forks; the development work being done by this company is very extensive and costly and considerable revenue is accruing to

1 GEORGE V., A. 1911

our line from this connection, an increase in revenue and messages is shown on this branch.

BARKERVILLE BRANCH.

Quesnel to Barkerville, sixty miles. This line is in good condition, and only such repairs as were made from time to time by the local repairers were necessary during the past year. Telephones working in connection with the telegraph circuit were installed at Lock's, Wingdam, Cottonwood and Stanley. These supplied a long felt want, and have given universal satisfaction, an increase in revenue and messages is also shown on this branch.

LILLOOET BRANCH.

Ashcroft to Lillooet, sixty miles. No reconstruction or repairs of a general nature were required on this branch, and the line is still in good order. The revenue here also shows an increase.

LIVINGSTONE BRANCH.

Hootalinqua, Y.T., to Livingstone Creek, Y.T., sixty miles. Owing to the absence of prospectors, and the general suspension of active mining operations in this district, a decrease is shown. This line being exclusively a telephone line, the agents are paid on a commission basis.

HAZELTON-PRINCE RUPERT.

Grand Trunk Pacific construction along this line necessitated the continued employment of extra men and the retention of offices at various camps to enable the work of repairing the daily interruptions caused by blasting and timber clearing being promptly repaired, thus avoiding undue delay to the large volume of business passing over this wire. The comparative statement shows an increase in revenue of \$15,298.91, and an increase in messages of 9,705. A continued increase in business is expected, and with the advancement of railway construction more offices will require to be opened between Kitselas and Hazelton.

PORT SIMPSON BRANCH.

Owing to its inaccessibility in places and the rough nature of the country along Work Channel, which the line from Port Simpson followed to the junction on the Skenna river, interruptions were frequent, and the work of making repairs arduous and dangerous. Permission was granted to extend the line from Prince Rupert to Port Simpson via Tuck's Inlet and Georgetown, abandoning the Work Channel section. Construction was begun Sept. 23rd, and completed to the limits of the city of Prince Rupert, October 31st. From that point to our office building, the pole line required to follow the streets, all of the holes had to be blasted out of solid rock, cross arms were used to carry the two wires around Kaian island, the blasting of the holes was necessarily slow work, and only a few men who could work to advantage were retained to complete the work, which was completed and in operation November 24th.

Referring again to the increased traffic on the main line north of Ashcroft, I might say that the steady increase in population at Fort George, where there are two townsites, will necessitate an extension of our line from Blackwater to that point in the near future, the absence of communication of this kind is being keenly felt at present.

Yours truly,

J. T. PHELAN,

Superintendent.

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REPORT 12.—(Supplement.)

OFFICE OF THE SUPERINTENDENT.

VANCOUVER, B.C., June 3rd, 1910.

D. H. KEELEY, Esq.,

General Superintendent Government Telegraphs,
Ottawa, Ont.

DEAR SIR,—With my annual report, I am sending comparative statements for the years 1907-8, 1908-9, omitted last year, and 1908-9, 1909-10, to go with this year's report.

I also inclose a list of employees with salaries and location, as requested.*

Yours truly,

J. T. PHELAN,

Superintendent.

[*Note.—Lists of staff, offices, etc., will be found in the tabular statements preceding the reports.]

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| | | | | | | | | |
|--------|--------|----------------------------|--------|--------|-----------|--------|--------|-----------|
| 1,921 | 2,068 | 2,568 45 Hazelton | 2,858 | 3,279 | 3,964 62 | 487 | 1,211 | 1,896 07 |
| 89 | 42 | 90 71 Hoodniqua, Y.T. | 100 | 61 | 114 87 | 11 | 19 | 18 16 |
| 74 | 6 | 20 48 Skook, B.C. | 3 | 3 | 7 34 | 6 | 6 | 13 14 |
| 82 | 74 | 111 85 Lower Laberge, Y.T. | 88 | 70 | 94 42 | 6 | 3 | 17 45 |
| 45 | 35 | 40 04 Moricetown, B.C. | 80 | 36 | 53 30 | 35 | 1 | 13 26 |
| 2 | 2 | 9 47 Nahlin | 17 | 8 | 29 12 | 11 | 6 | 19 65 |
| 11 | 4 | 2 12 Nakna | 3 | 3 | 8 66 | 8 | 1 | 6 54 |
| 226 | 226 | 302 77 Nechaco | 281 | 278 | 315 79 | 9 | 52 | 13 02 |
| 972 | 4 | 1 99 Ninth Cabin | 3 | 3 | 4 45 | 1 | 1 | 2 46 |
| 4 | 4 | 24 21 Ogilvie, Y.T. | 35 | 15 | 21 24 | 7 | 7 | 2 97 |
| 42 | 14 | 70 Mile House, B.C. | 72 | 44 | 22 69 | 44 | 1 | 22 69 |
| 28 | 13 | 11 90 83 " | 119 | 115 | 41 92 | 72 | 91 | 30 02 |
| 353 | 253 | 133 09 115 " | 408 | 323 | 166 57 | 75 | 90 | 33 48 |
| 615 | 622 | 373 91 150 " | 1,223 | 1,115 | 769 12 | 608 | 493 | 385 21 |
| 1,419 | 1,390 | 1,107 45 Quenel | 1,779 | 1,739 | 1,578 23 | 380 | 349 | 470 78 |
| 8 | 7 | 4 63 Second Cabin | 4 | 3 | 3 18 | 4 | 4 | 1 47 |
| 13 | 7 | 3 50 Sheslay | 8 | 2 | 1 00 | 5 | 2 | 2 50 |
| 4 | 4 | 10 94 Seventh Cabin | 2 | 2 | 0 66 | 4 | 2 | 10 94 |
| 436 | 340 | Sixth Cabin | 2 | 538 | 266 56 | 2 | 198 | 0 60 |
| 30 | 24 | 169 62 Soda Creek | 632 | 58 | 139 38 | 196 | 66 | 96 94 |
| 88 | 73 | 31 89 South Bulkley | 176 | 90 | 151 07 | 46 | 5 | 167 49 |
| 29 | 29 | 108 49 Stewart River, Y.T. | 111 | 78 | 10 04 | 22 | 10 | 42 58 |
| 33 | 32 | 14 44 Tagish | 11 | 4 | 60 05 | 18 | 33 | 4 40 |
| 33 | 32 | 38 35 Tantalus | 476 | 440 | 690 65 | 32 | 32 | 38 35 |
| 158 | 210 | Tellkwa, B.C. | 163 | 194 | 496 19 | 476 | 440 | 690 65 |
| 1 | 1 | Telegaph Creek, B.C. | 6 | 6 | 73 47 | 16 | 16 | 73 47 |
| 1 | 1 | Third Cabin | 6 | 6 | 10 08 | 1 | 6 | 10 08 |
| 12 | 9 | 25 Mile Cabin | 2 | 1 | 15 68 | 1 | 1 | 15 68 |
| 2,108 | 2,049 | Upper Laberge, Y.T. | 1,753 | 1,836 | 3,555 55 | 5 | 356 | 371 07 |
| 114 | 100 | Whitehorse | 153 | 114 | 137 03 | 7 | 213 | 0 65 |
| 32,693 | 33,777 | 112 16 Yukon Crossing | 41,323 | 43,482 | 69,914 57 | 39 | 1,608 | 10,295 36 |
| | | Totals | | | | 10,238 | 10,864 | 3,568 38 |

| | |
|--------------------------|--------------------|
| Net increase in messages | "Sent"—8,630 |
| " | "Rec'd"—9,705 |
| " | Revenue—\$6,616.98 |

Net increase in messages "Sent" = 8,630

¹⁶ Rec'd 11-10-70.

Revenue—\$6,416.98

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BARKERVILLE BRANCH.

| | | | | | | | | | | | | | | | | |
|-------|-----|-------|----|--------------|-------|-------|-------|-------|----|-----|-----|----|-----|----|----|----|
| 1,070 | 843 | 1,218 | 00 | Barkerville, | B. C. | 918 | 1,022 | 1,172 | 49 | 179 | 152 | 64 | 02 | 45 | 01 | |
| 25 | 11 | 14 | 28 | Cottonwood | " | 171 | 184 | 78 | 30 | 146 | | | | 0 | 50 | |
| 21 | 7 | 0 | 50 | Lafontaine | " | | | | | | 2 | 1 | | | | |
| 14 | 4 | 2 | 73 | Locke's | " | 67 | 68 | 18 | 35 | 60 | 61 | | 15 | 60 | | |
| 22 | 64 | 37 | 18 | Stanley | " | 150 | 119 | 105 | 07 | 76 | 55 | | 97 | 80 | | |
| | 33 | 8 | 45 | Winglam | " | 116 | 92 | 35 | 90 | 94 | 59 | | 27 | 45 | | |
| 1,200 | 965 | 1,281 | 16 | Totals | | 1,422 | 1,485 | 1,410 | 61 | 376 | 521 | 1 | 174 | 96 | 45 | 51 |

| | |
|--------------------------|-------------------|
| Net increase in messages | " Sent"-222 |
| " | " Rec'd"-520, |
| " | Revenue-\$120.45. |

HORSFELY BRANCH.

[illegible]

Net increase in messages "Sent" - 399.
 " " "Rec'd" - 313.
 " " Revenue - \$216.71.

LILLJOFFT BRANCH,

[illegible]

| | |
|--------------------------|-----------------|
| Net increase in messages | " Sent"—(38) |
| " | " Rec'd"—145 |
| " | Revenue—\$9 63. |

LIVINGSTONE CREEK BRANCH.

| | | | | | | | | | |
|-----|----|--------|--------------------------|----|----|--------|----|-------|-------|
| 134 | 82 | 225 00 | Livingstone Creek, Y. T. | 80 | 67 | 147 41 | 54 | 15 | 77 59 |
| 7 | 2 | 9 43 | Mason's Landing " | 7 | 3 | 5 90 | 1 | ..... | 8 55 |
| 141 | 84 | 234 45 | Totals. | 87 | 70 | 153 31 | 1 | 15 | 81 14 |

MAIN LINE AND BRANCHES.

GENERAL SUMMARY.

| | |
|--------------------------|----------------------|
| Not increase in messages | " Sent " 19,544 |
| " " " " " " " | " Recd "—19,870, |
| " " " " " " " | Revenue—\$22,190 60. |

| | |
|--------------------------|---------------------|
| Net decrease in messages | " Sent" -- 54 |
| " | " Rec'd" -- 14. |
| " | Revenue -- \$81.14. |

J. T. PHELAN, *Superintendent.*

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[illegible]

| | | |
|--------------------------|---------|--------------|
| Net decrease in messages | "Sept." | 2,387. |
| " | " | " |
| " | " | " |
| Revenue | — | \$10,000 "2. |

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BARKERVILLE BRANCH.

| | | | | | | | | | |
|-------|-----|--------|--------------------|-------|-----|----------|-----|----|--------|
| 999 | 899 | 819 71 | Barkerville, B. C. | 1,070 | 843 | 1,218 00 | 71 | 56 | 398 20 |
| 40 | 41 | 12 41 | Cottonwood " | 25 | 17 | 14 28 | 25 | 40 | 14 28 |
| | | | Lafontaine " | 2 | 1 | 0 50 | 7 | 38 | 2 45 |
| | | | Leek's " | 7 | 7 | 2 75 | 7 | 7 | 37 18 |
| | | | Stanley " | 74 | 64 | 37 18 | 74 | 64 | 8 45 |
| | | | Wingdam " | 22 | 53 | 8 45 | 22 | 33 | |
| 1,089 | 940 | 832 12 | Totals..... | 1,290 | 965 | 1,281 16 | 199 | 96 | 469 95 |

Net increase in messages "Sent" 161.
 " " "Rec'd" 25.
 Revenue—\$449 04.

HORSEFLY BRANCH.

| | | | | | | | | | |
|-------|-------|----------|----------------------|-----|-----|--------|-----|-----|----------|
| 646 | 497 | 1,120 79 | Bullion, B. C. | 137 | 125 | 231 17 | 509 | 372 | 889 62 |
| 250 | 192 | 120 35 | Harper's Camp, B. C. | 99 | 65 | 58 20 | 151 | 127 | 62 15 |
| 529 | 465 | 334 53 | Queens Forks " | 205 | 186 | 152 88 | 315 | 279 | 181 65 |
| 1,416 | 1,154 | 1,575 67 | Totals..... | 441 | 376 | 442 25 | 975 | 778 | 1,133 42 |

Net decrease in messages "Sent"—97½.
 " " "Rec'd" 778.
 Revenue—\$1,133 42.

LILLOOET BRANCH.

| | | | | | | | | | |
|-----|-----|--------|-------------------|-----|-----|--------|-----|----|--------|
| 239 | 263 | 156 07 | Lillooet, B. C. | 388 | 346 | 371 03 | 149 | 83 | 214 96 |
| 56 | 61 | 29 00 | Pavilion " | 48 | 53 | 33 61 | 8 | 8 | 4 61 |
| 295 | 324 | 185 07 | Totals..... | 436 | 399 | 404 64 | 149 | 83 | 219 57 |

Net increase in messages "Sent"—141.
 " " "Rec'd" 75.
 Revenue—\$219 57.

LIVINGSTONE CREEK BRANCH.

| | | | | | | | | | |
|----|----|--------|--------------------------|-----|----|--------|----|-------|-------|
| 65 | 48 | 147 85 | Livingstone Creek, Y. T. | 134 | 82 | 225 00 | 69 | 34 | 77 15 |
| 2 | 2 | ..... | Mason's Landing " | 7 | 2 | 9 45 | 5 | ..... | 9 45 |
| 67 | 50 | 147 85 | Totals..... | 141 | 84 | 234 45 | 74 | 34 | 86 60 |

Net increase in messages "Sent" 74.
 " " "Rec'd"—34.
 Revenue—\$86 60.

GENERAL SUMMARY.—

Net decrease, Main Line and Branches, messages "Sent"—496.
 " " "Rec'd"—710.
 Revenue—\$6,722 51.

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REPORT No. 13.

OFFICE OF THE GENERAL INSPECTOR (MARITIME PROVINCES.),
NORTH SYDNEY, C.B. N.S., 29th January, 1910.

D. H. KEELEY, Esq.,
General Superintendent, Govt. Telegraphs,
Ottawa, Ont.

DEAR SIR.—Inclosed is a statement of the different amounts of cable handled by the *Tyrian* during the season of 1909.

I have the honour to be, sir,

Yours faithfully,

A. B. McDONALD,

Electrician.

DEEP SEA CABLE.

| | | Knots. | Knots. |
|------------------|---|--------|--------|
| April | 17 Cable in tanks from 1908..... | | 7 98 |
| " | 24 Picked up, repairing Deer Island—Eastport..... | | 1 54 |
| | Laid down, " " " "..... | 2 16 | |
| " | 28 Laid down, repairing Deer Island—Campobello..... | 0 50 | |
| May | 5 Laid Blandford—Little Tancook..... | 2 34 | |
| | Laid Little—Great Tancook..... | 1 25 | |
| | Stripped (useless)..... | 0 20 | |
| June | 5 Picked up Magdalen Island cable repair..... | | 1 35 |
| | " " " "..... | | 1 28 |
| | " " " "..... | | 0 81 |
| | " " " "..... | | 0 65 |
| | Laid down, Magdaleu Island cable repair..... | 1 34 | |
| | " " " "..... | 1 33 | |
| | " " " "..... | 0 65 | |
| | " " " "..... | 0 50 | |
| " | 15 Laid down Harrington to Harrington Island..... | 3 00 | |
| " | 23 All remnants aboard spliced up, measured..... | | 4 50 |
| " | 24 Picked up Belle Isle cable..... | | 21 08 |
| July | 6 Laid new cable Tadousac—St. Catharine's Bay..... | 0 87 | |
| " | 11 Laid, Crane Island—Montmagny..... | 1 19 | |
| " | 21 Laid, Baie St. Paul—St. François..... | 0 75 | |
| " | Picked up, Baie St. Paul—St. François..... | | 0 75 |
| " | 29 Picked up Long Point cable repair..... | | 3 58 |
| | Laid down " " " "..... | 3 95 | |
| | Condemned, (useless)..... | 0 81 | |
| Aug. | 13 Picked up, Grand Manan repair..... | | 3 30 |
| | Laid down, " " " "..... | 3 81 | |
| " | 28 Laid down, St. Paul Island repair..... | 3 15 | |
| | Picked up, " " " "..... | | 3 17 |
| | Bad cable condemned..... | 0 54 | |
| Oct. | 19 Picked up, Long Point cable repair..... | | 5 16 |
| | Laid down, " " " "..... | 8 10 | |
| Dec. | 24 Laid down, St. Paul Island repair..... | 0 20 | |
| " | 31 Cable left in tanks..... | 18 57 | |
| SHORE END CABLE. | | 55 15 | 55 15 |
| | Left in tanks from 1908..... | | 1 07 |
| June | 15 Laid, Harrington Island cable..... | 0 30 | |
| " | 24 Picked up Belle Isle cable..... | | 1 00 |
| July | 6 Laid down at Tadousac..... | 0 15 | |
| " | 29 Laid down Long Point cable repair..... | 0 22 | |
| Dec. | 18 Laid Big Bras D'Or cable repair..... | 0 02 | |
| " | 31 Cable left in tank..... | 1 38 | |
| | | 2 07 | 2 07 |

PART VI

REPORT OF THE COLLECTOR OF REVENUE

DEPARTMENT OF PUBLIC WORKS

1909-10

DEPARTMENT OF PUBLIC WORKS,

OTTAWA, 8th June, 1910.

The Secretary,
Dept. Public Works,
Ottawa.

SIR,—I have the honour of submitting my report for the twelve months ended 31st March, 1910.

During the twelve months just closed, the revenue accrued from public works shows an increase of \$22,965.79, being \$185,491.08, while in the preceding year it was \$162,525.29.

The collections show an increase of \$2,259.67, being \$162,622.73, while in 1908-9 they amounted to \$160,363.06.

The revenue accrued from slides and booms was \$93,640.15 or \$15,869.04 more than for year ended 31st March, 1909.

The collections were \$71,667.20 or \$4,788.21 less than the previous year.

The outstanding uncollected revenue from slides and booms was increased by \$21,972.95.

The graving docks yielded \$45,816.93 or \$14,688.24 less than in 1908-9.

Rents collected amounted to \$45,138.61, an increase of \$21,870.17.

Having dealt with the revenue in a general way, I now submit the particulars, in detail, relative to the several services under their respective heads.

SLIDES AND BOOMS—OTTAWA DISTRICT.

The tolls charged up amounted to \$41,643.85 or \$1,252.86 more than in 1908-9.

The number of saw-logs that passed through the works was 4,507,687 or 481,200 pieces more than the previous year.

Of square timber there were only 104 pieces.

Of the revenue accrued during the year only \$27,930.01 was collected.

Of the dues accrued since July 1, 1889, when this department took over the collection, there remains uncollected \$25,079, full particulars of which will be found in Statement No. 2 herewith.

Of the dues accrued before 1st July, 1889, there still remains \$56,805.65, all of which should be written off. See statements Nos. 1 and 3 herewith for particulars.

The accounts for the Ottawa District stand thus:—

| | |
|--|-------------|
| Dues accrued during the year to 31st March, 1910 | \$41,643 85 |
| Outstanding 31st March, 1909 | 13,667 90 |

\$55,311 75

| | |
|---|-----------|
| Collected (including \$2,302.74 dues of 1908-9) | 30,232 75 |
|---|-----------|

| | |
|--|-------------|
| Balance outstanding 31st March, 1910 | \$25,079 00 |
|--|-------------|

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Being composed of—

| | |
|---------------------------|-------------|
| Dues of 1889-90.. | \$ 6,903 05 |
| “ 1890-91.. | 28 42 |
| “ 1892-3.. | 379 80 |
| “ 1896-7.. | 196 71 |
| “ 1903-4.. | 637 37 |
| “ 1907-8.. | 3,152 40 |
| “ 1909-10.. | 13,781 25 |
| | <hr/> |
| | \$25,079 00 |

Balance of dues outstanding prior to 1st July, 1889, when this Department took over the collection, \$56,805.65.

The large amount of the dues accrued during the fiscal year remaining uncollected calls for an explanation.

Some three years ago, the lumbermen claimed that some of the charges were unreasonably high and that one at least, that for the Cheneaux Boom, should be abolished; in consequence, pending the settlement of these questions, several withheld payment of the Cheneaux Boomage, for 1908-9 and again in 1909-10, while some withheld the whole account for 1909-10.

Of the latter, all but one have settled their accounts since the books were closed for the financial year.

An early settlement of the question at issue is very desirable, for when such are allowed to lag, they accumulate into formidable amounts, firms change or disappear, and when eventually the matters are decided, it is frequently found extremely difficult to collect the amounts decided to be due.

Herewith are statements in detail.

No. 1—Statement of amounts outstanding prior to 1st July, 1889, uncollected 31st March, 1910.

No. 2—Statement of dues accrued at Ottawa since 1st July, 1889, uncollected 31st March, 1910.

No. 3—Statement of dues accrued at Quebec prior to July 1, 1889, uncollected 31st March, 1910.

No. 4—Statement of the number of pieces of square timber, saw logs, &c., which passed through the Ottawa works during the year ended 31st March, 1910.

No. 5—Statement of dues accrued from each of the slides and works in the Ottawa district during the year ended 31st March, 1910.

REVIEW OF THE SQUARE TIMBER TRADE.

As it has been freely stated, that no more square timber will come over the Ottawa slides, it may not be out of place to glance back to the earliest record we have of what was once regarded as the most important branch of the commerce of this country, namely the timber trade.

UNDER FRENCH RULE.

During the French regime, the timber resources of Canada were regarded as of comparatively such little importance that they were treated as merely incidental to the general land policy of the government and the relation between the Crown, the seigneurs and the habitant or tenant, hence while the seigneur and his tenants, as required by the Seignioral Grant, as far back as 1683, were obliged to clear and inhabit the land, within a specified time, the seigneur was bound to 'preserve and cause to be preserved by his tenants within the limits of the grant, the oak timber fit for the building of vessels.' This condition was general if not universal, in all the

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grants made under the French Crown. Thus the only question which then seemed to concern the government was the maintenance of an ample supply of timber for the Royal Navy. The pine and other woods of the forests, which now form so important a feature of natural wealth, seem to have been looked upon with indifference by the seigneur and the habitant.

In 1731, a permit to cut 2,000 cubic feet of oak in the seigneurie of Dautray and Berthier, for the construction of war vessels of 500 tons, and another to cut a similar quantity in the seigneurie of Chambly and along the River Sorel, were granted.

In 1740, the Governor issued an ordinance forbidding people of all conditions, cutting any oak in the Ile Jesus, in the seigneurie of the Lake of Two Mountains and in the Ile Bizard until it was inspected, and such trees as were found adapted to naval construction, marked and retained.

In 1722, the Governor decided that though in the grants the oak was reserved, yet as the land could not be improved without cutting down the trees, it was in the public interest that valuable timber so cut down should be made into boards or cordwood rather than burned on the spot, as the money so realized would help the inhabitants to establish themselves, but where the inhabitant cut the timber solely to sell it, without afterwards clearing the land, the seignior had the right to seize the timber and bring the case before the Governor.

In 1713, an ordinance was issued forbidding the cutting of timber at Cote St. Jean by any not proprietors of the land, under a penalty of 50 livres and confiscation of the trucks and horses serving to transport the said wood. A similar prohibition was issued in 1747, applying to the seigneurie of St. Croix.

In the same year, permission was granted to take from adjoining lands timber necessary for the construction of bridges. In a word, up to the close of French rule in Canada, the only reservations by the government were of timber suitable for naval and military purposes, and the customary reservations by the seigniors of timber for various purposes out of the forest products of the holdings leased to the tenants.

UNDER BRITISH RULE.

On December 7th, 1763, after the British took possession of the colony, the first Governor, James Murray, was instructed to reserve in each township surveyed 'proper quantities of land for erecting fortifications and barracks, where necessary or other military or naval services and more particularly for the growth and protection of naval timber, if there are any woodland fit for that purpose, and reserving all of the country in the neighbourhood of Lake Champlain and between the lake and the River St. Lawrence or any other within your government as shall appear on survey to abound in trees fit for masting for our Royal navy and other useful and necessary timber for our navy constructions, when such trees are convenient for water carriage, and consider the advisability of some regulations to prevent the erection of saw mills without a license from the Governor or Commander in Chief, and so prevent waste and destruction in such lands as were reserved.'

In 1775, Guy Carleton, 'Captain General and Governor in Chief of the province of Quebec,' was instructed as follows:—

'That no grant be made of any lands on which there is any considerable growth of White Pines fit for masting for our Royal navy and which lie convenient for water carriage.'

I might mention that regulations of 17th February, 1789, also reserved water powers.

In 1807, licenses to cut timber in Canada were granted by the Home Government to the contractors for the Royal dock yards, who besides filling their contracts, took advantage of the privileges so conferred on them to do a general business in supplying the British markets. This was accomplished by the contractors issuing licenses to merchants and lumbermen in Canada who operated as their agents.

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The first Canadian timber laws were adopted in Lower Canada in 1805, 25th March:—‘An Act for the appointment of an inspector and measurer of scows and rafts and for regulating the pilots and conduction thereof between Chateauguay and the city of Montreal.’ The measurement simply had to do with the draughts of water required by rafts and scows to pass them safely through the rapids. In 1808, was adopted the ‘Act for the better regulation of the lumber trade’; it begins thus:—‘Whereas lumber is become an article of importance in the export trade of this province and it would tend to increase its growing reputation to the great advantage of trade if the quality and measurement thereof were properly ascertained.’ It provided that no lumber of the description specified in the Act should be exported until it had been culled, measured and certified as to quality; this Act was in force only two years.

In 1811, it was re-enacted with some changes, and legislation was enacted from time to time until 1819, when they were all repealed and a new Act adopted, this latter with amendments made in 1823 and 1825, was in force till 1827; after being renewed in 1832, it was allowed to expire, by lapse of the term for which it was revived, in 1834.

After the union of the provinces in 1840, a measure was passed by parliament whereby the appointment of a supervisor of cullers and board of examiners of cullers was authorized, it was repealed and a more stringent measure passed in 1843.

It was not till 1826 that the monopoly held by the navy contractors was abolished and the public allowed to cut timber on the ungranted lands of the Ottawa lumber region in payment of a fixed scale of rates to the Crown.

Philemon Wright, who with his little band of hardy pioneers, had penetrated the forest to the present site of the city of Hull, P.Q., arriving there on the 7th March, 1800, was the father of the lumber trade of the Ottawa, he also built the first saw mill in the Ottawa country, it being finished in the autumn of 1800.

The events of the war of the French revolution had thoroughly disorganized commerce, in consequence, the Baltic, from whence England had drawn most of her timber supplies, and the countries bordering thereon, were closed to English merchandise, England began to feel the want of timber and hemp, and Canada, the colony so despised by British politicians of the day, came to the front with considerable supplies of both.

Mr. Wright set diligently to work to produce timber and hemp, but abandoned the growing of the latter after the peace of 1815.

The first raft of square timber floated down the Ottawa river left the mouth of the Gatineau river, on the 11th June, 1806, and reached Montreal in 28 days, having run the Long Sault and Carillon rapids in safety, passed Montreal by the Back river and down the St. Lawrence to Quebec, and before 9 years the timber trade of the Ottawa was firmly established.

From 1806 till the imposition of a timber duty on exportation, in 1823, there are no authentic records available.

In the early days of the trade, the mode of constructing a raft was so crude and the apparatus so primitive, though displaying great ingenuity, that, to the navigator of late years, it seems almost incredible that with such appliances the timber was successfully taken through the rapids named on the Ottawa river and weathered the frequent rough seas on Lake St. Peter; the mooring apparatus consisted of wooden anchors and cables made of withes (twisted birch saplings) the only propelling powers being the winds, the currents and the oars of the raft's crew, which oars were about 24 feet long hewed out of small trees: hence two seasons were often consumed in getting a raft to Quebec, while the same trip could now be made in four weeks or a little less, for rafts have been delivered in Quebec early in July, having traversed the 600 miles from Lake Temiscaming since the last days of April.

In the early days, as in late years, a raft was composed of a number of cribs,

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which were built up thus: A frame of the desired dimensions was made of small flatted timber, bound together at the corners by wooden pegs and often further secured by withes, then the longest and straightest timber was selected for the bottom of the crib, stability was then secured by placing on the top of several pieces of traverses, being small flat timber placed across the timber in the frame and fastened to it also by withes, four or five rows of square timber, which latter were known as loading sticks; by the weight of these the timber in the bottom of the crib were kept almost solid in place, nevertheless it was not unusual when running a rapid, that striking sunken rocks, the bottom sticks would slip and the crib be wrecked; as the cribs were completed they were secured together, by withe ropes, in oblong form, and were then termed a raft.

The wooden anchors were made of oak, shaped somewhat like a grappling iron, with large chain withes passed through the different forks, encircling a stone of such dimensions as was deemed sufficient to answer the purpose and could be handled. This stone was secured within by interweaving other smaller withes about it, and continuing them until they connected with the main cable, also constructed of withes, and it is a matter of history that these primitive anchors answered every purpose to the rafts of those early times, that their more durable and powerful successors subsequently served, in later years.

TIMBER SLIDES.

As the timber became scarce in the region where the trade originated, operators had to resort to the country above the Chaudiere Falls, hence the necessity arose of providing some means of getting the timber safely past this and other similar places on the Ottawa river.

Up to the year 1829, when the first slide was constructed by a son of Philemon Wright, at Hull, the passing of timber over the Chaudiere Falls was attended with considerable labour and occasional loss of life.

At high water the timber was floated down through the Little Chaudiere, on the south side of the Ottawa, to the large bay, known as Nepean bay, at LeBreton's Flat, above the Falls, thence a crib was towed by men with ropes and snubbed around a small eddy, until thrown into the current of water leading to the southern edge of Chaudiere Falls; without this precaution, two-thirds of the timber would have taken the direction of the lost channel passing over the falls into the great cavern, near what is now the location of the Ottawa Electric Power House, from whence it could not be removed until low water, and then only at great extra expense.

Pine cribs passing the falls as above described, were broken up, the detached pieces were caught by a boom extended from the lower end of Victoria island to the main shore on the Quebec side of the river, and the timber rerafted for the Quebec market; cribs of heavy floating timber and staves that could not be secured by the boom, were broken up in the bay above the falls and drawn overland to below the falls to be there rerafted.

When, in low water, this channel was impassible, the cribs were run over the Little Chaudiere, through the Mast channel, falling down with the current, until passing the reef extending from the island (long since removed) above the Kettle, thence, rounding the reef, were made fast to the island, where two men in a birch canoe, could place the crib in the best position to pass through the Big Kettle, the men returning with the canoe for another crib, and so on, until the whole raft was passed. At this pitch of water, it was necessary to boom the Ottawa river from the point at the Hull landing (near the Eddy Company's sulphite mill) to what is now known as Nepean point, where the timber was rerafted.

In Switzerland and Sweden single stick slides had existed for years, but the construction of a slide of sufficient capacity to carry through a crib of timber was reserved for the development of a trade of corresponding magnitude.

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The first of those slides was constructed by Ruggles Wright, son of the founder of the trade, in the year 1829, and George Buchanan built another on the south side of the Ottawa, where the government slides now stand, in the year 1832; they were both adapted to pass cribs of 24 feet in width and 40 feet and upwards in length.

At the Chats, Mr. Buchanan built the first slide in 1835.

In 1838-9, a slide was built at Portage du Fort, but was destroyed by a freshet and rebuilt in 1841 by Mr. J. Poupore, sr.

Those at Calumet island were built by David Moore, sr., and that at Des Joachim in the same year, 1843.

On the tributaries, the slides were constructed as follows:—

Gatineau boom, by the government, in 1848.

Madawaska, commenced by the lumbermen prior to the Union, and continued by the Madawaska Improvement Company; the slide was rebuilt by the government in 1846-7, at the High Falls.

Coulange slide, built by the government in 1865.

Black river, by J. Poupore, sr., in 1867.

Petawawa, government, in the years 1857-8.

River Dumoine, by the River Dumoine Boom and Slide Company, in 1851.

The above relates only to the construction of the first works of the kind constructed on these rivers.

Until the year 1841, notwithstanding that steamers had, for many years previously, been plying on the Ottawa, the only means of propulsion used by the lumbermen in getting the timber to market were the currents, the wind and oars, but in 1841, for the first time, a steamer towed rafts from Ottawa to Grenville.

In 1819, the first steamboat was placed on the stretch from Hull to Grenville, by Philemon Wright, but until 1825 there was no steam communication between Grenville and Point Fortune.

In 1833, the first steamer, the *Lady Colborne*, was placed on the route from Aylmer to the Chats; in 1846 came the *Oregon*, plying between the head of the Chats and Portage du Fort, and in 1854 the *Pontiac*, which ran from Pembroke to Des Joachim.

To return to the timber, from Bout de l'Isle, the rafts were towed by tugs, and considerable loss was incurred by the rafts being broken up by storms in Lake St. Peter.

The timber began to reach Ottawa generally in the middle of the month of May and in the '60's the last was not usually down till the middle of September.

In 1883, came another change in the mode of conveying the timber to market, for in this year a raft of timber was shipped by rail from Mackey's station on the Canadian Pacific Railway and another lot from North Bay on the same line; this timber was thus conveyed to Papineauville, 40 miles below Ottawa, and there rafted and taken to Quebec by the old methods.

Nowadays, most of the timber is carried by rail right through to Quebec, no doubt, mainly because the prices (of which more later on) enable the producer to pay the greater cost of this manner of conveyance, and it also results in a great saving of time.

Arrived at Quebec, the timber was put into booms at various points, known as coves, where it was measured, culled and put into shipping order, then shipped and stowed by stevedores, who made a profession of this business. From these and the men employed by them sprang the ship-labourers' union, which has not proved an unmixed blessing for the city of Quebec.

The vessels employed in carrying timber to the old country were barques of six to seven hundred tons register and would usually stow 750 to 960 tons of timber.

The average voyage out and in occupied from eight to twelve weeks.]

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There are many yet living who can recall how welcome was the news 'the spring fleet' or 'the fall fleet' had arrived, as the case might be, for these vessels usually made two round trips in the season.

In this connection I may be permitted to call attention to the following facts:

In 1805, the number of vessels entering the port of Quebec was 146, having a freight capacity of 26,136 tons.

In 1859, there arrived at the port, 970 vessels whose freight capacity was 510,814 tons, manned by 17,046 men, while those cleared from the same port numbered 1,051 vessels of a carrying capacity of 539,135 tons, and manned by 17,834 men. The gross total to all ports of the province, inland and sea ports, was 17,417 vessels inward and 16,499 outward bound, of a grand total of 8,313,563 tons.

But the ordinary ship was not the only means adopted of transporting the product of our forests to the old country.

In 1824, there was built, in Quebec, a large ship or raft called the *Columbus*, and in 1825, a Mr. Charles Wood constructed another; both were presumably built at the Island of Orleans. Of the first, no particulars are at hand, but the second, called the *Baron Renfrew*, was a ship built up of solid timber, etc., as follows:—

Her dimensions were 304 x 61 x 34 feet, and registered 5,294 tons; main mast 104 feet; topmast 40 feet; top gallant mast 30 feet; rudder post 50 feet x 26 inches; her tiller was a log of oak 32 feet x 16 inches, steered by three wheels with two men to each wheel, she had a crew of 93 men.

Her cargo, or more properly speaking, she was built of 84 masts and bowsprits, 3,207 logs of pine, 423 of oak, 15 of elm, 23 of hickory, 4 of basswood, 3 of butter-nut, one of birch, 15 of maple, 11 knees, 13,398 deals and planks, 4,502 deal ends, 23,089 pieces of lathwood, 4,788 ash oars, 5,148 pipe staves, 75,765 W.I. staves, 19,511 staves and heading, and 34,582 treenails; total, 9,500 tons.

She sailed from Quebec on the 16th August, 1825, arrived in the Downs 16th October following; was taken in tow by two steamers, but grounded on the Long-sands off Margate; two days later she floated and was brought to anchor. I might mention here that her best bower anchor weighed 90 cwt., and her second best bower anchor was 77 cwt.; she had one cable 26 inches in circumference and steam cable of 13 inches; but a storm arose which caused her to drag her anchors seaward and ultimately she went ashore between Gravelines and Calais, and became a total wreck.

In 1859, the value of timber exported was \$12,572,759, including costs of all kinds, labour, freight, etc., which was more than half of the whole trade of the province for the year. How inconsiderable was the whole trade of the year 1805, being only \$260,000.

It is worthy of mention here that the measure which gave to the lumber trade such legal protection as would enable those engaged in it to invest their means with at least a semblance of government countenance and protection, namely, when in 1823 the first duty on timber was levied in Canada during the administration of Earl Dalhousie; it was at the suggestion of Alexander McDonell of Sand Point, Ont. who was connected with the trade from the year 1817.

A table is appended to this report, No. 15, which shows the quantities of timber exported to the United Kingdom from the year 1845 to the year 1909, both inclusive.

The largest quantity available at Quebec in any one year was in 1851, and it is recalled by an old resident of Ottawa that in this year the late Hon. John Egan had 31 rafts, which, as each raft represented from 75,000 to 100,000 cubic feet, would make his production of that year about 3,000,000 cubic feet, a quantity which seems beyond belief.

In this connection, I am reminded of an anecdote which was current many years ago. Owing to overproduction, times were frequently very bad with the lumbermen; following one of these seasons of depression, two of the more prominent square timber men met and entered into a written compact to take out but a certain limited quantity

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during the following season. The next morning, each of them began preparations to double their previously intended output. Needless to say that the penalty provided in the agreement was never demanded by either of the parties thereto.

THE DECLINE OF THE TIMBER TRADE.

The comparison of exports, commencing with the year 1850 up to 1909, illustrates the changed conditions under which the forest supplies are sent to the European markets.

In the earlier part of the last century, the entire export of Quebec pine was in the form of timber in the squared log, hewn with the axe, and floated down to Quebec merchants, who put the timber in shipping order by butting and dressing same at the Quebec shipping coves, disposing of the culls locally for wharf building and other similar purposes. The greater part of the timber so received and shipped was white pine, squared to a sharp edge on the four corners; deals were made for export to other countries, and only reached the English market in the character of stowage deals. The square logs (and later on waney) were converted into planks and boards at the various saw-mills in the great towns in England, and in county yards, pit-sawing was largely in vogue for log conversion. In 1861, waney pine was made for the first time, this wood being left with a wane of from three to six inches on the corners, so avoiding the excessive waste of wood resulting from hewing the timber exactly square. Previous to this, the timber was square and of large average, beautifully hewn by the lumbermen in the woods; but board (waney) pine, that is, short logs of large girth, were sent down the drives with the other timber, and soon found their way into the market. Being cut from the lower part of the tree accounted for the waney character of the logs, but the quality of the timber was excellent. It gradually almost altogether supplanted square pine. To illustrate this point, I beg to submit the following comparison taken from the table herewith:—

| <i>Year.</i> | <i>Square pine.</i> | <i>Waney pine.</i> | <i>Total.</i> |
|--------------|---------------------|----------------------|---------------|
| 1861..... | 15,731,000 c. ft. | 6,735,000 c. ft..... | 22,466,000 |
| 1909..... | 66,200 c. ft. | 699,360 c. ft..... | 765,560 |

While the decline in the quantity of square and waney pine made for the Quebec market, to some extent due to the scarcity of suitable trees to manufacture into timber, it is in a far greater degree attributable to the increase in the deal and board trade. Gradually the produce of the saw mill took the place, for export, of timber in the hewn log. Before leaving this point, I would observe that in the Ottawa region a large proportion of the trees are suitable to make deal logs, but would not be large enough to be made into waney board pine. This is exemplified by the smallness of the square pine that was latterly taken down from Ottawa. In former days square pine was made 70, 80 and even 100 feet cube average; lately, it was with difficulty that 40 feet average cube was procurable in square pine, and the waney board pine is decreasing in girth annually. Formerly, 20 inches and over, average cube, was easily had, as late as 1904, 17 inch average was as large as most manufacturers would undertake to supply, and they frequently fell below this average on delivery at Quebec.

Reverting to the main cause of the decline in the timber trade, large saw mills were operated for many years at Montmorency, the water-power of the falls running the mills. There were also several other saw mills operated by steam and water power adjacent to Quebec or within a short distance of that city. For many of these mills, rafts of round pine logs were brought from the Gatineau and other limits. At Hawkesbury, the Hamilton mills (now owned by the Hawkesbury Lumber Company) and the Gilmour & Co.'s mills at Chelsea, produced large quantities of deals for export, which were rafted down to Quebec, and shipped either wet as 'floated deals' or after being landed and piled as 'dry floated deals.'

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Present conditions are entirely different; the trade in hewn timber has gradually diminished, and seems to have almost come to an end, so far as the Ottawa country is concerned. The Montmorency mills have been dismantled long ago, like most of the other mills in the vicinity of Quebec and the Gilmour mills at Chelsea, have been demolished and the practice of floating deals to Quebec has disappeared.

The Hawkesbury mills still exist, but cut principally white pine lumber, that is, boards two inches and under, in thickness, for the United States market; the limited quantity of deals now cut at these mills goes to Montreal by rail or barge for shipment by ocean steamers loading at that port. I should mention that quite a large quantity of deals is manufactured by the larger mills in the Ottawa district, such as those of J. R. Booth, McLachlin Bros., W. C. Edwards & Co., Gilmour & Hughson, The Shepard & Morse Lumber Company, and others.

As deals took the place of timber, so lumber is gradually supplanting deals for export.

The sawn white pine exported is manufactured by Ottawa valley and western mills, and shipped from Montreal as being nearer the point of production.

This change from the manufacture of timber hewed square in the woods to the bringing of it to the mills in the form of round logs, has effected a very important saving of the very best material, formerly left in woods in the form of chips cut in the process of squaring the trees, which were useless for any purpose except that of spreading the vast forest fires that have destroyed many times more timber than ever was cut with the axe.

The change from sailing vessels to steamer for ocean carriage has necessarily affected Quebec as a shipping port for wood goods, as steamers charge no more on freight from Montreal than from Quebec, and as a matter of fact prefer the first named port as being under more favourable condition. Montreal also has the advantage of being nearer most of the mills that now produce pine lumber and deals, as they are generally west of it, and the freight by barge or rail is much less than to Quebec.

Thus the export business in wood has changed from hewn timber made with the axe and floated down to Quebec in rafts, with a limited proportion of deals sawn at Quebec mills or floated to Quebec from Hawkesbury or Chelsea on the Gatineau, to a small export of timber from Quebec, where hewn timber can best be handled on account of the facilities given by the tides and an export of sawn lumber including some deals from Montreal. A considerable proportion of the reduced quantity of timber now shipped comes from the United States, which is the source of all the oak exported, and most of the elm. The supply of oak suitable for export is exhausted in Canada and the supply of elm is rapidly tending in that direction. Another change is that of shipping by steamer instead of by sailing ship. These two factors account for the loss of the squared timber trade by Quebec and Levis, which was inevitable, but some authorities say it was accelerated by the restrictions imposed and the wages exacted by the Quebec ship labourers.

Before leaving this subject, it may be interesting to say a few words about the price the lumberman received at Quebec for his timber. I have no record at hand earlier than of the year 1841. I was once shown by an old lumber merchant, the settlement of account between a Quebec merchant and himself, in which he was credited with a raft of square pine, 70 cubic feet average, at 3d. (5c.) per foot.

Mentioning this to another old lumberman, he said it was perfectly correct, for he recalled that he had told the lady, whom he afterwards married, that he could not afford to marry till timber was worth 4½d. (8c.) a foot. He was married in 1846. In recent years, waney timber 18-inch average has brought as much as 80 cents per cubic foot and square pine 30 to 40 feet average, 40 to 50 cents per foot, a vast advance from the 5c. of 1841 or the 4½d. of 1846.

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Doubtless the great prices paid for timber limits, higher timber duties levied by the provincial governments and the growing scarcity of large timber, all account for much of the increase in value to the producer, which is practically six times as much as it was in 1862, in which year it is of record that square timber could not be produced and delivered at Quebec under 7½d. or 12½ cents per foot.

In concluding this imperfect and crude sketch, I wish to acknowledge my indebtedness for most of the facts to papers furnished by Mr. E. H. Wade of Quebec, and Mr. Jas. Harney, acting supervisor of cullers at the same place; also to the very complete history of the timber license system compiled with the aid of Mr. Aubrey White, Assistant Commissioner of Crown Lands, Ontario, to a pamphlet published by the late G. H. Perry, formerly city engineer, Ottawa, and last but not least, to Mr. Coutlee's history of the development of the Ottawa country, to be found in the Georgian Bay Canal Report of 1908.

Respectfully submitted,

E. T. SMITH,

Collector of Public Works Revenue.

ST. MAURICE DISTRICT.

The revenue accrued from this district was \$47,332.02, being \$12,966.16 more than in 1908-9.

The collections amounted to \$36,780.58; \$2,414.72 more than 1908-9.

Uncollected of 1909-10: Dues, \$10,551.44.

The amount outstanding prior to 1st July, 1892, remains unchanged, viz.: \$14,486.49, and should be written off for reasons assigned in Statement No. 6 herewith.

The number of pieces of all kinds of timber that passed through the works was equivalent to 4,917,017 pulp and saw-logs or 1,282,829 pieces more than the previous year.

For the first time since I took charge of this district in 1892, have I failed in collecting all the revenue during the financial year, therefore an explanation seems to be required.

On the 24th of April, 1909, the booms were all set at Three Rivers, the water in the St. Maurice being then very low; sometime afterwards, the booms at different points above were in place. On the 18th May, the water having risen rapidly for some days previously, the boom at St. Jacques des Piles broke and some 400,000 logs swept down the river to the Pointe au Bernard boom just above Shawinigan falls, where, thanks to the precaution and attention of the Boom Master, the logs were all held safely, but logs continued coming into this boom until on the 20th of May there was estimated to be 450,000 logs retained in it, and had not the water commenced to fall on that date, it is difficult to give an opinion as to what the loss to the lumbermen would have been. As far as we could judge, the greater part of these logs belonged to the Laurentide Paper Company of Grande-Mère, and it is in consequence of the loss which they claim incurred to them, through their logs passing below Grande-Mère that they refused to pay the accounts I rendered for tolls amounting to \$10,551.44, which is the amount above reported outstanding.

I may say here that since the books were closed they have sent me a cheque for \$6,841.82, thus placing their loss at \$3,709.62.

I venture to express the hope that this matter will be speedily settled.

I am not aware whether the attention of the conservation committee has been called to a subject to which I have referred in my reports annually since the year 1901, namely, the constitution of a park in the country surrounding the chain of lakes known on the St. Maurice as the Manuan waters and the holding back of the

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waters by a series of dams; the latter has been initiated by the manufacturers on the St. Maurice, but only in a small way. The scheme such as I have outlined would not cost such an amount as would challenge criticism, and could be installed on such conditions as a public improvement as would yield a revenue sufficient to pay interest and sinking fund, without being a serious charge on the lumbermen and manufacturers who would benefit by its establishment.

NEWCASTLE DISTRICT.

The dues accrued from this district amounted to \$1,575.94, being \$94.98 more than the previous year, all collected but \$10.41, since paid.

The tolls outstanding on 31st March, 1910, amounted to \$3,567.30, of which \$3,521.19 should be written off in accordance with a judgment in the Exchequer Court; \$35.70 will also have to be forgiven, the debtor being a very old man and hopelessly insolvent, the remainder, \$10.41, has since been collected.

Full particulars of amount outstanding will be found in Statement No. 7, herewith.

SAGUENAY DISTRICT.

The dues accrued during the year ended 31st March last amounted to \$3,088.34, all paid.

The amount outstanding on 31st March, 1909, viz., \$5,624.82, all of which is disputed. However, I anticipate an early settlement of this matter, and hope that when it is decided, that in future, as during last season, these charges will be cheerfully and promptly paid.

There are only two parties concerned in this dispute, namely, the Chicoutimi Pulp Company and Joseph Vachon. For details see Statement No. 8.

GRAVING DOCKS.

Esquimalt Graving Dock.

The revenue from this service was \$12,576.64, being \$8,006.72 less than the previous year. (See statement No. 9). Of the 94 days the dock was occupied during the year it was used for 34 days by H. M. vessels. The total number of vessels docked was 20 of 60,126 tons.

Lévis Graving Dock.

The revenue was \$10,476.52 less than for the year 1908-9, being only \$18,751.44. (See Statement No. 10).

During the season of navigation the dock was occupied for 166 days by 15 vessels of 27,438 tons.

During the winter of 1909-10, it was occupied by ss. *Arctic*, ss. *Lord Strathcona*, sch. *G.T.D.*, lightships *Princess Shoal* and *Red Island*, dredge *International*, and tug *Storm King*.

While this dock is of a length and width sufficient to accommodate many vessels of the larger class, it is unfortunate that the entrance is so narrow (60 feet). In consequence many dockages that would yield large returns, are lost.

Kingston Graving Dock.

This dock was occupied for 244 days including winter months. The revenue was \$14,488.84, the largest in the history of the work; it was thus \$3,795 greater than in 1908-9.

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Fifty-four vessels of 37,263 tons were docked during the year. (See Statement No. 11 for particulars.)

It having been decided last autumn to rent this dock, tenders were invited and the highest offer being \$10,000 per annum, bid by the Kingston Shipbuilding Company, it was leased to them for 21 years from the 1st May, 1910.

This policy will doubtless prove a paying one for the government, for this work, until quite recently, has not paid operating expenses, henceforward these will have to be paid by the company and the rental means \$10,000 a year clear profit to the department.

RENTS.

By Order in Council of 27th April, 1909, the collection of the rentals under leases granted by this department, which was previously done by the Inland Revenue Department, was transferred to the Department of Public Works.

Statements Nos. 12 and 13 show in detail the condition on March 31, 1910, of the accounts taken over on March 31, 1909.

Statement No. 14 shows condition of land sales and interest account, also from Inland Revenue Department, which show no change for many years.

Several of the unsettled accounts are of many year's standing, some are under investigation, and others I expect will have to be written off for good and sufficient reasons.

Exclusive of the above mentioned rentals, the revenue from government properties has become an important item, having increased from \$24,726.37 in 1908-9, to the respectable sum of \$43,115.51 in 1909-10, being \$18,389.14 greater in the last mentioned year.

Of this sum \$40,191.61 was collected, \$618.75 written off, in lieu of repairs or on account of poverty, and \$2,305.15 was outstanding at the close of the year. Of the latter item I may say that a considerable amount will be recovered, but just how much I am unable at this writing to estimate; when, however, it is considered that many of the properties upon which almost all outstanding rents have accrued are old and mainly sought for by people who cannot pay large rents, that as the amount uncollected is but about 5 per cent of the whole, the sum is not so very large—nevertheless this branch (the collection of rents) alone is the most troublesome and unsatisfactory part of the duties of this office.

The collections on this account were as follows:—

PROPERTY OR PRIVILEGE RENTED.

| | <i>Collected.</i> |
|---|-------------------|
| Old post office building, Victoria, B.C. | \$ 4,948 00 |
| Sussex street property, Ottawa, Ont. | 23,183 67 |
| Examining warehouse site, Montreal, Q. | 1,916 00 |
| Portion graving dock premises, Kingston, Ont. | 125 00 |
| Part reserve, Victoria Island, Ottawa | 2 00 |
| Reserve, east side St. Maurice river. | 50 00 |
| Postal station site, Montreal. | 1,087 00 |
| Privilege of erecting towers on Burlington Beach. | 1 00 |
| Island and water power, Calumet Channel, P.Q. | 25 00 |
| Part reserve, Pond Creek. | 8 00 |
| Part reserve, west side Black River, P.Q. | 25 00 |
| Ile Caron, P.Q. | 50 00 |
| Part Ile St. Christophe, P.Q. | 75 00 |
| Land on Columbia and Begbie streets, Westminster, B.C. | 100 00 |
| Sand privileges, Burlington Beach canal. | 100 00 |
| Old Government House, Yale, B.C. | 5 00 |
| Privilege water pipe connection, William Head, B.C. | 12 00 |

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|--|----------|
| Examining warehouse site, Vancouver, B.C. | 975 00 |
| Kingston, Ont., land on Clarence street. | 1 00 |
| Privilege of laying tracks on bridge near Edmonton.. | 1 00 |
| Part Carrier-Lainé property, Lévis, Que. | 320 00 |
| Barras wharf, Lévis, P.Q. | 500 00 |
| Part graving dock premises, Lévis, P.Q. | 1 00 |
| Canal feeder, Catherinestown, P.Q. | 1 00 |
| Public building site, Seaforth, Ont. | 197 40 |
| “ “ Mount Forest, Ont. | 114 22 |
| “ “ Waterloo, Ont. | 93 95 |
| “ “ Kemptville, Ont. | 10 00 |
| “ “ Tilsonburg, Ont. | 69 50 |
| “ “ Chesley, Ont. | 46 25 |
| “ “ Sudbury, Ont. | 184 62 |
| Court House, Regina, Sask. | 3,300 00 |
| Sheriff's office, Regina, Sask. | 1,764 00 |
| Land Titles office, Prince Albert, Sask. | 900 00 |
| Hydraulic rents (formerly Inland Revenue Department) | 4,819 00 |
| Minor public works (formerly Inland Revenue Dept.).. | 128 00 |

\$ 45,138 61

The following comparative table of Public Works revenue accrued during the year ended March 31, 1910, compared with that of the fiscal year ended March 31, 1909, shows at a glance on what accounts increases and decreases herein reported have occurred:—

| | Year ended March 31, 1910. | Year ended March 31, 1909. | Increase 1910. | Decrease 1910. |
|----------------------------------|-------------------------------|-------------------------------|----------------|----------------|
| | \$ cts. | \$ cts. | \$ cts. | \$ cts. |
| <i>Slides and Booms.</i> | | | | |
| Ottawa district. | 41,643 85 | 40,390 99 | 1,252 86 | |
| St. Maurice district. | 47,332 02 | 34,365 86 | 12,966 16 | |
| Newcastle district. | 1,575 94 | 1,480 96 | 94 98 | |
| Saguenay district. | 3,088 34 | 1,533 30 | 1,555 04 | |
| | 93,640 15 | 77,771 11 | 15,869 04 | |
| <i>Graving Docks.</i> | | | | |
| Esquimalt, B.C. | 12,576 64 | 20,583 36 | | 8,006 72 |
| Kingston, Ont. | 14,488 84 | 10,693 84 | 3,795 00 | |
| Lévis, Que. | 18,751 44 | 29,227 96 | | 10,476 52 |
| | 45,816 92 | 60,505 16 | 3,795 00 | 18,483 24 |
| Net decrease 1910—\$14,688,24. | | | | |
| <i>Rents.</i> | | | | |
| Hydraulic rents | 3,977 00 | 3,597 00 | 380 00 | |
| Minor public works. | 126 00 | 127 00 | | 1 00 |
| Other public properties. | 41,931 01 | 24,114 97 | 17,816 04 | |
| | 46,034 01 | 27,838 97 | 18,196 04 | 1 00 |

In conclusion I have to acknowledge the uniform courtesy and cheerful assistance accorded me at all times by the officers of the department with whom I have been brought in contact during the year.

I have the honour to be,

Your obedient servant,

EDW. T. SMITH,

Collector of Public Works Revenue.

No. 1.—STATEMENT of Slidage and Boomage from the Ottawa Slides and Works, accrued prior to July 1, 1889, Outstanding March 31, 1910.

| By whom due. | Bad and Doubtful Debts. | Chaudiere Boomage in Suspense. | Other Slide and Boom Dues Disputed. | Total Outstanding on Sept. 30, 1907. | Years to which Dues belong. | Remarks. |
|-------------------------------------|-------------------------------|--------------------------------------|--|---|----------------------------------|--|
| John & Wm. McLean..... | \$ 3 14 | \$ cts. | \$ cts. | \$ cts. | 1873..... | Insolvent. |
| John Rowan..... | 342 50 | ..... | ..... | 53 14 | 1872-1873..... | " |
| Lemieux & Charrette..... | 21 35 | ..... | ..... | 342 50 | 1873..... | " |
| Tailion & Lapierre..... | 148 10 | ..... | ..... | 21 30 | 1873-1874..... | " |
| Mosgrove & McHarry..... | 261 42 | ..... | ..... | 148 10 | 1873-1874..... | " |
| W. C. Wells..... | 600 90 | ..... | ..... | 261 42 | 1873-1874..... | " |
| Dufresne & McGarity..... | 528 80 | ..... | ..... | 600 90 | 1873-1874..... | " |
| Walton Smith..... | 171 46 | ..... | ..... | 528 80 | 1874-1875..... | " |
| A. H. Baldwin..... | 3,507 92 | ..... | ..... | 171 46 | 1874-1875..... | " |
| Hon. James Skedd..... | 9,807 65 | ..... | ..... | 3,507 92 | 1871 to 1874..... | " |
| Batson & Currier..... | 5,558 70 | ..... | ..... | 9,807 65 | 1861-63-64-69-75 to 1878..... | " |
| A. F. A. Knight..... | 546 30 | ..... | ..... | 5,558 70 | 1875 to 1877..... | " |
| James Walker..... | 11 25 | ..... | ..... | 546 30 | 1878..... | " |
| R. Campbell & Son..... | 1,558 50 | ..... | ..... | 11 25 | 1877..... | " |
| James G. Bryson..... | 73 50 | ..... | ..... | 1,558 50 | 1879 to 1881..... | " |
| Costello Bros..... | 90 62 | ..... | ..... | 73 50 | 1886..... | " |
| N. E. Cormier..... | 428 34 | ..... | ..... | 90 62 | 1882..... | " |
| James Yuhill..... | 9 29 | ..... | ..... | 428 34 | 1888..... | Overcharge. |
| J. & R. Grier..... | 76 84 | ..... | ..... | 9 29 | 1876..... | " |
| R. & W. Conroy..... | 95 42 | ..... | ..... | 76 84 | 1883..... | " |
| A. P. White..... | 101 00 | ..... | ..... | 95 42 | 1882-1883..... | " |
| B. Caldwell & Son..... | 4 33 | ..... | ..... | 101 00 | 1881..... | " |
| J. R. Booth..... | 9,871 93 | 298 88 | ..... | 4 33 | 1887..... | " |
| Perley & Pattée..... | 8,889 85 | ..... | ..... | 10,270 81 | 1881 to 1888..... | " |
| The Bronson & Weston Lumber Co..... | 8,180 79 | ..... | ..... | 8,889 85 | 1881 to 1888..... | " |
| Pierce & Co..... | 462 18 | ..... | ..... | 8,180 79 | 1881 to 1888..... | " |
| G. A. Grier & Co..... | 1,003 59 | ..... | ..... | 462 18 | 1888..... | " |
| Estate late Levi Young..... | 1,461 20 | ..... | ..... | 1,003 59 | 1881-1887..... | " |
| Wm. Mason..... | 413 85 | ..... | ..... | 1,461 20 | 1881 to 1885..... | " |
| Gilmour & Co..... | 406 27 | ..... | ..... | 413 85 | 1881 to 1888..... | " |
| John Rochester..... | 298 88 | ..... | ..... | 406 27 | 1884..... | " |
| J & G. Bryson..... | ..... | 252 20 | ..... | 298 88 | 1881 to 1883..... | " |
| | 23,967 28 | 31,006 54 | 651 08 | 252 20 | 1886..... | Counter claim for damages by the breaking of Conlonge works. |
| | | | | 55,653 90 | | |

1 GEORGE V., A. 1911

*Chaudiere boomage. These parties claim that they have maintained these works wholly at their own expense since 1881.

*Chaudiere boomage. These parties claim that they have maintained these works wholly at their own expense since 1881.

Counter claim for damages by the breaking of Conlonge works.

EDWARD T. SMITH,
Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, June 8, 1910.

SESSIONAL PAPER No. 19

No. 2.—STATEMENT of Slide and Boom Dues accrued from the Ottawa River Works, since July 1, 1889, outstanding on March 31, 1910.

| Name. | Year to which dues belong. | Chaudiere Booms in suspense. | Cheneaux Booms. | Ordinary dues. | Total. | Remarks. |
|--------------------------------------|----------------------------|------------------------------|-----------------|----------------|--------------|---|
| J. R. Booth | 1889-90 | \$ 2,561 69 | | | \$ 2,561 69 | Chaudiere boomage reported to Council and referred to Treasury Board should be written off. |
| Bronson & Weston Lumber Co. | 1889-90 | 2,056 96 | | | 2,056 96 | |
| Forley & Pattee. | 1889-90 | 1,293 26 | | | 1,293 26 | |
| Wm. Mason & Sons. | 1889-90 | 167 66 | | | 167 66 | |
| Pierce & Co. | 1889-90 | 913 48 | | | 913 48 | |
| Alex. Fraser, account Thos. Stephens | 1890-91 | | | 28 42 | 28 42 | Legal action taken to recover this. |
| J. R. Booth | 1892-93 | | | 379 80 | 379 80 | Retained by Mr. Booth in settlement of account due him, which the Auditor General refused to pay, as Mr. Booth appeared to be in arrears in this and statement No. 1. Have counter claim for work done on slide to this amount. Petowawa slideage disputed. |
| Bryson & Fraser | 1896 | | | 196 71 | 196 71 | " |
| J. R. Booth | 1903 | | | 339 27 | 339 27 | " |
| Hawkesbury Lumber Co. | 1903 | | | 298 10 | 298 10 | " |
| J. R. Booth | 1907-09 | | 1,644 25 | | 1,644 25 | Claim for reduction before the department. |
| Sherpard & Morse Lumber Co. | 1907-09 | | 4,640 80 | | 4,640 80 | " |
| Estate late R. Hurdman. | 1907-09 | | 1,012 25 | | 1,012 25 | " |
| Gilmour & Hughson. | 1907 | | 62 11 | | 62 11 | " |
| McLachlin Bros. | 1909 | | 39 76 | | 39 76 | " |
| W. C. Edwards & Co. | 1901 | | 1,211 04 | | 1,211 04 | " |
| R. & T. Ritchie. | 1909 | | 648 36 | | 648 36 | " |
| J. Harkins | 1909 | | 47 89 | 6,894 43 | 6,894 43 | " |
| H. Creighton. | 1909 | | | 638 62 | 638 62 | Since settled in full. |
| S. A. Watt. | 1909 | | | 6 50 | 6 50 | Since paid. |
| Patrick Sertel. | 1909 | | | 2 35 | 2 35 | " |
| Bank of Montreal | 1909 | | | 5 94 | 5 94 | " |
| " | 1909 | | | 3 63 | 3 63 | " |
| " (Low Lumber Co.). | 1909 | | | 8 30 | 8 30 | " |
| | 1908 | | | 67 41 | 67 41 | " |
| | | \$ 6,983 05 | \$ 9,306 47 | \$ 8,869 43 | \$ 25,079 00 | |

EDW. T. SMITH.
Collector of Slides and Booms Dues.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, JUNE 8, 1910.

1 GEORGE V., A. 1911

No. 3.—STATEMENT of Outstanding Slide Dues, Ottawa District, Bonds for which were sent to Quebec for Collection.

| Names. | From 1860. | From 1861. | Total. |
|----------------------------|------------|------------|----------|
| | \$ cts. | \$ cts. | \$ cts. |
| Hon. James Skead | 245 00 | 210 00 | 455 00 |
| James Mair | | 696 75 | 696 75 |
| | 245 00 | 906 75 | 1,151 75 |

These amounts were uncollected, as the parties claimed damages for loss caused by the Madawaska boom breaking in 1860.

A decision on their claims was not arrived at till August 2, 1869. On the 5th idem, Messrs. Skead and Mair were notified that the department could not recognize their claim.

To the best of my knowledge, this decision was never communicated to the Collector of Slide Dues; consequently, these accounts remained in abeyance.

Since then, both parties died, and I believe both were insolvent at the time of their death.

EDW. T. SMITH,

Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,

OTTAWA, June 8, 1910.

No. 4.—STATEMENT of the Number of Pieces of Square Timber, Saw Logs, &c., that passed through the Government Slides and Works on the River Ottawa and tributaries during the fiscal year ended March 31, 1910:—

| | <i>Pieces.</i> |
|------------------------------------|-----------------|
| Square timber. | 104 |
| Saw-logs. | 4,507,687 |
| Boom and dimension timber. | 39,802 |
| Cedars. | 76,508 |
| Railroad ties. | 538,148 |
| Fence posts. | 74,323 |
| | <hr/> 5,236,572 |

Also 75,124 cords pulp wood.

The revenue accrued on the above was \$41,643.85.

EDW. T. SMITH,

Collector of Public Works Revenue.

Department of Public Works,

Ottawa, 8th June, 1910.

SESSIONAL PAPER No. 19

No 5.—STATEMENT showing the Dues Accrued on the Undermentioned Works on the River Ottawa and its tributaries during the fiscal year ended March 31, 1910:—

| <i>River or other improvement.</i> | <i>Amount.</i> |
|------------------------------------|----------------|
| Main Ottawa.... | \$ 2,527 30 |
| Cheneaux boom.... | 7,417 48 |
| River Petewawa.... | 11,332 91 |
| Madawaska.... | 1,762 57 |
| Coulonge.... | 4,413 19 |
| Dumoine.... | 179 95. |
| Black River.... | 6,472 47 |
| Gatineau.... | 7,537 98 |
| | <hr/> |
| | \$41,643 85 |

EDW. T. SMITH,

Collector of Public Works Revenue.

Department of Public Works,
Ottawa, 8th June, 1910.

1 GEORGE V., A. 1911

No. 6.—STATEMENT of Slide and Boom Dues from the St. Maurice Slides and Works,
outstanding on March 31, 1910.

| Name. | Year to which dues belong. | Amount. | Total. | Remarks. |
|-----------------------------|----------------------------|----------|------------|---|
| | | \$ cts. | \$ cts. | |
| George Baptist, Son & Co... | 1878 | 469 95 | | |
| " " " | 1879 | 2,110 02 | | |
| " " " | 1880 | 1,696 18 | | Have counter claims for damages to logs caused by the booms not being stretched early enough in the spring of 1878 to prevent the logs going over the chutes. The claims were submitted to special commissioner, Mr. McDougall, afterwards judge, who recommended that the claims of the parties should be allowed. |
| " " " | 1881 | 293 69 | | |
| " " " | 1882 | 165 80 | | |
| " " " | 1884 | 118 50 | | |
| " " " | 1888 | 4 28 | 4,859 02 | |
| Ross, Ritchie & Co..... | 1878 | 3,072 84 | | |
| " " " | 1883 | 2,173 69 | | |
| " " " | 1884 | 28 96 | | |
| " " " | 1886 | 1 62 | | |
| " " " | 1887 | 4 38 | 5,281 48 | |
| Alex. Baptist..... | 1879 | 2,116 96 | 2,116 96 | |
| Wm. Ritchie & Co ... | 1888 | 779 24 | | |
| " " " | 1889 | 332 11 | 1,111 35 | Of this amount \$754.20 is claimed to be an overcharge—Insolvent. |
| Ritchie Bros.. | 1886 | 413 43 | | This amount is composed of overcharges in 1886 and 1887 of \$842.75 and overpayment in 1884 of \$205.38. |
| " " " | 1887 | 634 71 | 1,048 14 | |
| G. B. Hall | 1890 | | 49 34 | Insolvent. |
| T. E. Normand | 1890 | | 14 28 | Claims that this balance is an overcharge. |
| Trefflé Biron | 1891 | | 0 92 | Would cost more to collect than it is worth. |
| The Laurentide Paper Co.... | 1909 | | *14,481 49 | |
| | | | 10,551 44 | |
| | | | 25,032 93 | |

* To make this balance agree with the Public Accounts, there should be deducted \$7.93 overcredited Alex. Baptist, and \$217.17 added thereto, being \$190.40 paid July 23, 1884, and \$26.77 overcharged in error to Wm. Little, not in any of the collector's returns, which will give the balance due September 30, 1894, of \$14,690.73.

EDWARD T. SMITH,

Collector of Slide and Boom Dues.

DEPARTMENT OF PUBLIC WORKS,

OTTAWA, June 8, 1910.

SESSIONAL PAPER No. 19

No. 7.—STATEMENT of Slide and Boom Dues accrued from the Newcastle and Trent River Works, outstanding on March 31, 1910.

| Name. | * Year to which dues belong. | Amounts dis- puted. | Ordinary Dues. | Total. | Remarks. |
|--------------------------|--|---------------------------|-------------------|----------|---|
| | | | | | |
| | | \$ cts. | \$ cts. | \$ cts. | |
| Irwin & Boyd..... | 1881..... | 59 79 | ..... | 59 79 | |
| Thompson & McArthur | 1880..... | 52 78 | ..... | 52 78 | |
| Jabez Thurston.... | 1882..... | 12 50 | ..... | 12 50 | Insolvent..... |
| McDougall & Ludgate. | 1879..... | 65 07 | ..... | 65 07 | |
| Bigelow & Trounce.... | 1882 to 1885..... | 216 21 | ..... | 216 21 | |
| R. G. Strickland..... | 1882, '83, '85, '86, '87..... | 215 08 | ..... | 215 08 | |
| Est. late Geo. Hilliard. | 1877 to 1883 and 1886 .. | 354 15 | ..... | 354 15 | Dead and estate dis- |
| T. G. Hazlett..... | 1881, '82, '84 to '89..... | 885 25 | ..... | 885 25 | tributed. |
| J. M. Irwin..... | 1882, '83, '85 to '88. .. | 698 45 | ..... | 698 45 | According to judgment in the Exchequer Court, re Boyd vs. Smith, these cannot be col- lected. |
| D. Ulyot..... | 1881 to 1887..... | 547 68 | ..... | 547 68 | |
| Greene & Ellis..... | 1881 to '83, '85, '88 and '89 | 157 01 | ..... | 157 01 | |
| A. W. Parkin..... | 1884, '85, '88, 90 and '91 | 65 92 | ..... | 65 92 | |
| The Dickson estate.... | 1883..... | 137 50 | ..... | 137 50 | |
| Alfred McDonald..... | 1888..... | 40 80 | ..... | 40 80 | |
| John Parkin..... | 1889..... | 13 00 | ..... | 13 00 | |
| John Dovey..... | 1894, '95, '96..... | ..... | 35 70 | 35 70 | Sent to Department of Justice for collection. |
| John Carew..... | 1909..... | ..... | 10 41 | 10 41 | |
| | | 3,521 19 | 46 11 | 3,567 30 | |

EDWARD T. SMITH,

Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, June 8, 1910.

1 GEORGE V., A. 1911

No. 8.—STATEMENT of Slide and Boom acerued from the Saguenay Works, outstanding on March 31, 1910.

| Name. | Year * to which dues belong. | Amount. | Remarks. |
|-------------------------------------|---------------------------------------|----------|-----------|
| | | \$ cts. | |
| La Cié du Pulpe de Chicoutimi. | 1906, 1907, 1908. . | 5,568 15 | Disputed. |
| Jos. Vachon | 1906. | 56 67 | " |
| | | 5,624 82 | |

EDWARD T. SMITH,

Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, June 8, 1910.

SESSIONAL PAPER No. 19

THE DRY DOCK AT ESQUIMALT.

No. 9.—STATEMENT of Dues and Other Charges Collected during the Year ended
March 31, 1910.

| NAME OF VESSEL DOCKED. | Tonnage. | PERIOD OF DOCKAGE. | | Dockage Charges. | Other Charges. | Total. |
|---------------------------------|----------|--------------------|----------|------------------|----------------|-----------|
| | | From. | To. | | | |
| | | 1909. | 1909. | \$ cts. | \$ cts. | \$ cts. |
| D.G.S. 'Lilloet' | 551 | Mar. 10 | Mar. 11 | 300 00 | 16 20 | 316 20 |
| H.M.S. 'Shearwater' | 980 | Apr. 15 | Apr. 24 | 364 61 | | 364 61 |
| S.S. 'Greenwich' | 2,938 | " 25 | " 28 | 598 00 | 9 00 | 607 00 |
| S.S. 'Indravelli' | 7,005 | " 28 | " 30 | 581 00 | 10 20 | 591 20 |
| S.S. 'Katanga' | 3,316 | May 11 | May 14 | 614 00 | 2 40 | 616 40 |
| H.M.S. 'Algerine' | 1,100 | June 7 | June 11 | 257 73 | | 257 73 |
| S.S. 'Georgia' | 2,881 | " 14 | " 19 | 792 00 | 13 00 | 805 00 |
| S.S. 'Lonsdale' | 3,171 | " 29 | July 1 | 504 00 | 5 40 | 509 40 |
| S.S. 'Puritan' | 4,942 | Aug. 30 | Aug. 31 | 521 00 | 1 20 | 522 20 |
| H.M.S. 'Shearwater' | 986 | Sept. 24 | Sept. 27 | 170 00 | | 170 00 |
| H.M.S. 'Algerine' | 1,100 | " 27 | " 28 | 131 90 | | 131 90 |
| S.S. 'Hercules' | 3,789 | Oct. 7 | Oct. 11 | 632 00 | | 632 00 |
| S.S. 'Georgia' | 2,886 | " 12 | " 15 | 596 00 | 11 40 | 607 40 |
| S.S. 'Princess Charlotte' | 3,844 | Nov. 9 | Nov. 11 | 517 00 | 14 40 | 531 40 |
| S.S. 'Fitzclarence' | 4,034 | " 17 | " 21 | 763 00 | 3 00 | 766 00 |
| Water supplied | | | | | 3 60 | 3 60 |
| S.S. 'Princess May' | 1,717 | Dec. 9 | Dec. 10 | 428 75 | | 428 75 |
| S.S. 'Belle of Scotland' | 5,007 | " 14 | " 16 | 541 00 | 2 40 | 543 40 |
| | | 1910. | 1910. | | | |
| S.S. 'Georgia' | 2,781 | Jan. 3 | Jan. 27 | 2,608 00 | 83 40 | 2,691 40 |
| Water supplied H. E. Sims | | | | | 3 50 | 3 50 |
| H.M.S. 'Egeria' | 940 | Feb. 10 | Feb. 10 | 722 75 | | 722 75 |
| S.S. 'Princess Charlotte' | 3,844 | Mar. 21 | Mar. 23 | 517 00 | 37 80 | 554 80 |
| S.S. 'Restorer' | 3,180 | Entrance | Fee. | 200 00 | | 200 00 |
| | 60,126 | | | 12,359 74 | 216 90 | 12,576 64 |

EDW. T. SMITH,
Collector of Public Works Revenue.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, June 8, 1910.

1 GEORGE V., A. 1911

THE DRY DOCK AT LEVIS, P. Q.

No. 10.—STATEMENT of Dues and Other Charges Collected During the Year ended March 31, 1910.

| NAME OF VESSEL DOCKED. | Tonnage. | PERIOD OF DOCKAGE. | | Dockage charges. | Other charges. | Total. |
|---------------------------|----------|--------------------|--------------|------------------|----------------|-----------|
| | | From. | To | | | |
| | | 1908. | 1908. | \$ cts. | \$ cts. | \$ cts. |
| S.S. 'Brockville'..... | | Winter | 1908-9..... | 400 00 | | 400 00 |
| S.S. 'Campana'..... | | " | "..... | 800 00 | | 800 00 |
| Barge 'Etna'..... | | Entry | Fee..... | 200 00 | | 200 00 |
| Tug 'Storm King'..... | | Winter | 1908-9..... | 400 00 | 10 20 | 410 20 |
| Tug 'Monitor'..... | | " | "..... | 400 00 | 6 37 | 406 37 |
| Dredge 'Progress'..... | | " | "..... | 400 00 | | 400 00 |
| S.S. 'Lady Evelyn'..... | | " | "..... | 400 00 | | 400 00 |
| | | 1909. | 1909. | | | |
| S.S. 'Corinthian'..... | 6,227 | May 6..... | May 11..... | 1,272 70 | | 1,272 70 |
| Barge 'Etna'..... | 369 | April 26..... | " 11..... | 339 85 | | 339 85 |
| S.S. 'Stigstad'..... | 4,633 | June 8..... | June 23..... | 2,397 24 | 18 50 | 2,415 74 |
| S.S. 'Lady of Gaspe'..... | 1,189 | " 23..... | " 25..... | 118 90 | 50 00 | 168 90 |
| Dredge 'Progress'..... | | | | | 251 44 | 251 44 |
| Tug 'Monitor'..... | | | | | 22 68 | 22 68 |
| S.S. 'Montcalm'..... | 1,432 | April 26..... | May 31..... | 1,832 12 | 50 00 | 1,882 12 |
| S.S. 'Champlain'..... | 522 | May 31..... | June 7..... | 482 70 | | 482 70 |
| S.S. 'Berthier'..... | 934 | July 6..... | July 22..... | 1,047 20 | | 1,047 20 |
| Powers and Dusseault..... | | | | | 1 06 | 1 06 |
| S.S. 'Aranmore'..... | 1,170 | Aug. 16..... | Aug. 25..... | 876 50 | | 876 50 |
| S.S. 'Turret Bell'..... | 2,211 | " 26..... | " 28..... | 271 10 | | 271 10 |
| Str. 'Rapids Queen'..... | | Entry | Fee..... | 200 00 | | 200 00 |
| S.S. 'George Town'..... | | " | "..... | 200 00 | | 200 00 |
| Dredge 'Galveston'..... | 1,271 | July 26..... | Aug. 5..... | 864 76 | | 864 76 |
| S.S. 'George Town'..... | 1,358 | Oct. 1..... | Oct. 15..... | 883 32 | 4 00 | 887 32 |
| S.S. 'Lady Grey'..... | 733 | July 21..... | July 26..... | 200 00 | | 200 00 |
| S.S. 'Rapids Queen'..... | 944 | Oct. 14..... | Nov. 12..... | 1,668 80 | | 1,668 80 |
| S.S. 'Odland'..... | 1,244 | Nov. 13..... | " 23..... | 925 80 | | 925 80 |
| S.S. 'Oeland'..... | 3,201 | " 13..... | " 23..... | 1,556 20 | | 1,556 20 |
| | | 1910. | 1910. | | | |
| S.S. 'Rapids King'..... | | Entry | Fee..... | 200 00 | | 200 00 |
| | 27,438 | | | 18,337 19 | 414 25 | 18,751 44 |

EDW. T. SMITH.

*Collector of Public Works Revenue.*DEPARTMENT OF PUBLIC WORKS,
OTTAWA, June 8, 1910.

SESSIONAL PAPER No. 19

THE DRY DOCK AT KINGSTON, ONTARIO.

No. 11.—STATEMENT of Dues and other Charges collected during the Year ending March 31, 1910.

| Name of Vessel Docked. | Tonnage. | PERIOD OF DOCKAGE | | Dockage Charges. | Other Charges. | Total. |
|------------------------------------|----------|-------------------|----------|------------------|----------------|-----------|
| | | From | To | | | |
| | | 1909. | 1909. | \$ cts. | \$ cts. | \$ cts. |
| Str. Parthia | 198 | April 8 | April 12 | 89 60 | | 89 60 |
| " Islander | 119 | " 13 | " 14 | 33 80 | | 33 80 |
| Bge. Dunmore | 590 | " 15 | " 16 | 129 65 | 3 00 | 132 65 |
| " Selkirk | 719 | " 19 | " 20 | 121 90 | | 121 90 |
| Str. Donnelly | 319 | " 20 | " 27 | 175 45 | 21 00 | 196 45 |
| Bge. Aye Ready and two scows | 300 | " 28 | May 14 | 354 00 | 31 00 | 385 00 |
| Str. Turbinia | 1,064 | May 15 | " 16 | 156 40 | | 156 40 |
| Govt. Scow, Massena 3 | 180 | " 17 | " 24 | 156 00 | | 156 00 |
| Str. Macassa | 529 | " 25 | " 26 | 121 42 | 5 00 | 126 42 |
| " Mojeska | 678 | " 27 | " 28 | 141 53 | 5 00 | 146 53 |
| " Caspian | 957 | " 31 | June 3 | 279 68 | 10 50 | 290 18 |
| " St. Lawrence | 312 | June 3 | " 4 | 62 40 | | 62 40 |
| " Windsor | 1,962 | " 5 | " 6 | 246 20 | 3 00 | 249 20 |
| " Corona | 1,274 | " 7 | " 8 | 221 99 | 10 50 | 232 49 |
| " Speedy | 233 | " 9 | " 12 | 96 60 | | 96 60 |
| Yacht Corona | 304 | " 15 | " 18 | 114 00 | 10 50 | 124 50 |
| " St. Louis | 50 | " 15 | " 16 | 20 00 | | 20 00 |
| Str. Waddington | 1,603 | " 28 | " 28 | 210 30 | 10 50 | 220 80 |
| Tug H. F. Bronson | 137 | " 29 | " 30 | 27 40 | 5 00 | 32 40 |
| Two Hopper Scows | 160 | July 3 | July 3 | 32 00 | | 32 00 |
| Str. Waddington | 1,603 | " 5 | " 9 | 546 93 | 10 00 | 556 93 |
| " Cardinal | 237 | " 9 | " 9 | 47 40 | 5 00 | 52 40 |
| " St. Joseph | 304 | " 12 | " 13 | 71 44 | 10 50 | 81 94 |
| Tug Mary K. Hall | 104 | Aug. 16 | Aug. 17 | 20 80 | | 20 80 |
| " Francis, W. C. | 38 | " 18 | " 19 | 20 60 | | 20 60 |
| Str. Advance 1631, Cargo 165 | 1,196 | " 19 | " 21 | 253 32 | | 253 32 |
| Bge. Winnipeg | 681 | " 23 | " 25 | 189 61 | 3 00 | 192 61 |
| " Nadine | 484 | " 26 | " 27 | 96 80 | | 96 80 |
| " Thrush | 584 | " 27 | " 31 | 210 60 | 6 00 | 216 60 |
| Str. Blue Bell | 752 | " 31 | Sept. 1 | 125 20 | | 125 20 |
| Bge. Condor | 567 | Sept. 2 | " 3 | 106 70 | | 106 70 |
| S.S. Ontario No. 1 | 5,146 | " 8 | " 18 | 3,806 58 | 32 75 | 3,839 33 |
| S.S. Ontario No. 1 | | 1908. | 1908. | | | |
| | | July 19 | July 22 | 594 27 | | 594 27 |
| | | 1909. | 1909. | | | |
| Str. Sowards | 191 | Sept. 20 | Sept. 24 | 108 20 | | 108 20 |
| " John Rolph | 421 | " 24 | " 25 | 84 20 | | 84 20 |
| Bge. Kildonan | 499 | " 27 | " 28 | 99 80 | | 99 80 |
| " Selkirk | 719 | " 29 | Oct. 1 | 172 23 | | 172 23 |
| " Ceylon | 508 | Oct. 1 | " 2 | 172 58 | 3 00 | 175 58 |
| Str. Saginaw | 357 | " 4 | " 7 | 121 38 | 5 00 | 126 38 |
| Tug Florence | 113 | " 7 | " 9 | 42 60 | 5 00 | 47 60 |
| Bge. St. Louis | 599 | " 11 | " 12 | 130 87 | | 130 87 |
| Str. Bothnia | 833 | " 13 | " 13 | 133 30 | | 133 30 |
| Bge. Huron | 475 | " 23 | " 23 | 95 00 | | 95 00 |
| Str. Donnelly | 319 | " 26 | " 27 | 63 80 | 10 50 | 74 30 |
| " Bayfield | 276 | Nov. 4 | Nov. 6 | 75 20 | | 75 20 |
| " Simla | 1,490 | " 6 | " 8 | 355 45 | | 355 45 |
| " Saginaw | 357 | " 10 | " 12 | 108 89 | | 108 89 |
| Tug H. F. Bronson | 137 | " 13 | " 13 | 27 40 | | 27 40 |
| S.S. Keyport | 1,721 | " 17 | " 26 | 1,185 86 | 55 00 | 1,240 86 |
| S.S. Keywest | 1,725 | " 26 | " 28 | 343 25 | 10 50 | 353 75 |
| Str. Belleville | 1,233 | " 29 | Dec. 6 | 648 01 | 5 00 | 653 01 |
| Gov. Steel Scow | 125 | Dec. 7 | " 17 | 195 00 | 10 50 | 205 50 |
| Str. Advance | 1,031 | " 17 | " 18 | 153 10 | | 153 10 |
| Tug Trudeau, two scows and dredge | | 1909. | 1910. | | | |
| Sir Richard | 350 | Dec. 21 | Mar. 29 | 980 00 | 26 00 | 1,006 00 |
| | 37,263 | | | 14,176 09 | 312 75 | 14,488 84 |

EDW. T. SMITH,
Collector of Public Works Revenue.DEPARTMENT OF PUBLIC WORKS,
OTTAWA, June 8, 1910.

1 GEORGE V., A. 1911

No. 12.—Hydraulic and other Rents, &c, Lessees' Accounts

DR.

| Balance due April 1, 1909. | Rents Accrued up to March 31, 1910. | Total. | Location. | Occupant. |
|----------------------------|-------------------------------------|----------|-----------------------|--|
| \$ cts. | \$ cts. | \$ cts. | | |
| | 200 00 | 200 00 | Ottawa River..... | Royal Trust Co..... |
| | 100 00 | 100 00 | " | " |
| | 300 00 | 300 00 | " | " |
| 50 00 | 100 00 | 150 00 | " | " |
| 50 00 | 100 00 | 150 00 | " | " |
| 150 00 | 300 00 | 450 00 | " | " |
| 200 00 | 400 00 | 600 00 | " | " |
| | 300 00 | 300 00 | " | " |
| | 100 00 | 100 00 | " | Ottawa Investment Co..... |
| | 600 00 | 600 00 | " | The Ottawa Power Co..... |
| 200 00 | 200 00 | 400 00 | " | Royal Trust Co..... |
| | 520 00 | 520 00 | " | " |
| | 10 00 | 10 00 | " | " |
| 100 00 | 100 00 | 200 00 | " | " |
| | 96 00 | 96 00 | " | " |
| 112 00 | 8 00 | 120 00 | " | Mary Conroy..... |
| 570 84 | | 570 84 | " | Royal Trust Co..... |
| 25 00 | 25 00 | 50 00 | " | " |
| 200 00 | | 200 00 | " | Merchants Bank of Canada..... |
| 96 60 | | 96 00 | " | " |
| | 1 00 | 1 00 | " | Ottawa Investment Co..... |
| 380 00 | | 380 00 | " | John Rankin..... |
| | 150 00 | 150 00 | " | J. R. Booth..... |
| 85 00 | | 85 00 | " | Colin Dewar..... |
| | 50 00 | 50 00 | " | Royal Trust Co..... |
| | 1 00 | 1 00 | " | Alfred Desjardin..... |
| | 100 00 | 100 00 | " | Royal Trust Co..... |
| 10 00 | 10 00 | 20 00 | " | " |
| | 1 00 | 1 00 | St. Lawrence..... | Quebec Harbour Commissioners..... |
| 275 00 | | 275 00 | " | Richelieu and Ontario Navigation Co..... |
| | 1 00 | 1 00 | Quebec..... | Corporation of Quebec..... |
| 1 00 | 1 00 | 2 00 | " | Narcisse Blais..... |
| | 1 00 | 1 00 | Rondeau Harbour..... | School Trustees..... |
| 2 00 | 1 00 | 3 00 | Collingwood..... | Great Northern Transit Co..... |
| 5 00 | 1 00 | 6 00 | Ottawa..... | E. G. Laverdure..... |
| | 1 00 | 1 00 | Three Rivers..... | Corporation of Three Rivers..... |
| | 100 00 | 100 00 | " | Union Bag and Paper Co..... |
| 165 00 | | 165 00 | British Columbia..... | A. Peel..... |
| 90 00 | | 90 00 | " | Jonathan Maury..... |
| 25 00 | 25 00 | 50 00 | " | Roderick Finlayson..... |
| 75 00 | 25 00 | 100 00 | " | Joseph Spratt..... |
| | 1 00 | 1 00 | " | Bank British Columbia..... |
| 4 00 | | 4 00 | " | W. Dodd..... |
| | 12 60 | 12 00 | " | D. W. Gordon..... |
| 5 00 | | 5 00 | " | S. Williams..... |
| | 5 00 | 5 00 | " | George A. Huff..... |
| 70 00 | | 70 00 | River du Lievre..... | Dominion Phosphate Co..... |
| 1 00 | | 1 00 | Charlottetown..... | Rt. Rev. Bishop McIntyre..... |
| | 16 00 | 16 00 | Antigonish, N.S..... | R. C. Archibald..... |
| | 1 00 | 1 00 | Owen Sound..... | G. T. Railway..... |
| 240 00 | | 240 00 | Windsor..... | Archie McNee..... |
| | 5 00 | 5 00 | Bayfield, N.S..... | Chas. L. Gass..... |
| | 1 00 | 1 00 | " | " |
| 10 00 | | 10 00 | Village of Brook..... | Wm. Pedwell..... |
| 1 00 | 1 00 | 2 00 | Walkerton, Ont..... | D. Robertson and J. Rowland..... |
| | 1 00 | 1 00 | British Columbia..... | Canadian Pacific Ry. Co..... |
| | 5 00 | 5 00 | County Grey, Ont..... | Jacob Duke Speirs, estate..... |
| | 1 00 | 1 00 | Levis, Que..... | Cyril Robitaille..... |
| 3,197 84 | 3,977 00 | 7,174 84 | | |

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, June 8, 1910.

SESSIONAL PAPER No. 19

for the Year ending March 31, 1910.

Cr.

| Description of Property. | Date to which Account is made up. | Paid during the year. | Balance due on March 31, 1910. | Total. |
|--|-----------------------------------|-----------------------|--------------------------------|----------|
| | | 8 cts. | 8 cts. | 8 cts. |
| Lot B and C, Chaudiere st. service ground | Dec. 31, '09 | 200 00 | | 200 00 |
| Lot D | " " | 100 00 | | 100 00 |
| Lots H, I and J, grist mill, North Head st. | " " | 300 00 | | 300 00 |
| Lot K, fanning mill, South Head st. | " " | 150 00 | | 150 00 |
| Lot L, service ground. | " " | 150 00 | | 150 00 |
| Lots, Q, R and T, service ground, North Middle st. | " " | 450 00 | | 450 00 |
| Lots, M, N, O and P, service ground, (no water used). | " " | 600 00 | | 600 00 |
| Lots E, F and G, South Head st. | " " | 300 00 | | 300 00 |
| Lot S, service ground | " " | 100 00 | | 100 00 |
| Lots U, V, W, X, Y and Z, service ground. | " " | 600 00 | | 600 00 |
| Two strips of land. | June 30, '10 | 400 00 | | 400 00 |
| Portion government reserve, head of slide. | Sept. 20, '10 | 520 00 | | 520 00 |
| Bridge over slide | June 30, '10 | 10 00 | | 10 00 |
| Strip of land Amelia island. | Jan. 1, '11 | 100 00 | 100 00 | 200 00 |
| Reserve head of Chaudiere island. | " 1, '11 | 96 00 | | 96 00 |
| Small island in Deschene rapids | " 1, '10 | | 120 00 | 120 00 |
| Portion lot 39, con. A, Nepean | " 31, '84 | | 570 84 | 570 84 |
| Excavated channel, slide and 2 dams, Little Chaudiere. | Mar. 1, '11 | 50 00 | | 50 00 |
| Water lot, opposite lot 30, con. A, Nepean. | Dec. 1, '91 | | 200 00 | 200 00 |
| Three small islands, Ottawa river | Apr. 30, '91 | | 96 00 | 96 00 |
| Covering over portion of Ottawa slides. | Nov. 9, '10 | 1 00 | | 1 00 |
| East portion of Hawley's Island. | June 20, '91 | | 380 00 | 380 00 |
| Piece of land s.w. end Union bridge | May 12, '10 | 150 00 | | 150 00 |
| Piece of land, Victoria island. | June 15, '09 | 85 00 | | 85 00 |
| Land south side Middle st., Victoria island. | Aug. 31, '10 | 50 00 | | 50 00 |
| Land, Longue Pointe Rouge, Templeton, Co., Ottawa. | Oct. 4, '10 | | 1 00 | 1 00 |
| Southwest of lot No. 1, Amelia island. | " 9, '09 | 100 00 | | 100 00 |
| Lot Pa, South Head street. | Jan. 10, '11 | 20 00 | | 20 00 |
| Lot near Custom House, Quebec. | Sept. 1, '10 | 1 00 | | 1 00 |
| Roadway from pier at Coteau Landing. | July 1, '09 | | 275 00 | 275 00 |
| Old provincial government building and grounds. | June 24, '10 | 1 00 | | 1 00 |
| Privilege to erect bridge on St. Charles river. | Feb. 6, '11 | 1 00 | 1 00 | 2 00 |
| Log building former Custom House, Shrewsbury, Ont. | Sept. 11, '09 | 1 00 | | 1 00 |
| Use of breakwater to store coal | Jan. 1, '11 | 3 00 | | 3 00 |
| South east half lot 8, Ottawa | Dec. 18, '09 | | 6 00 | 6 00 |
| Land, Ile St. Christophe, river St. Maurice. | " 1, '10 | 1 00 | | 1 00 |
| Portion of Assay office, New Westminster. | June 30, '09 | 100 00 | | 100 00 |
| " " " " | " 30, '89 | | 165 00 | 165 00 |
| " " " " | " 30, '89 | | 90 00 | 90 00 |
| Permit for 2 bulkheads, Victoria harbour. | " 1, '10 | 25 00 | 25 00 | 50 00 |
| Privilege to build wharf on lots A. and C. | " 1, '10 | 100 00 | | 100 00 |
| Right to drain through government property, Nanaimo. | Dec. 1, '10 | 1 00 | | 1 00 |
| Old government house, Yale. | July 24, '08 | | 4 00 | 4 00 |
| Beach lots, A, C, E, F, Ft of 7, 8, 9, Nanaimo harbour | Aug. 28, '10 | 12 00 | | 12 00 |
| Frontage lot 7, block M. Victoria. | July 16, '04 | | 5 00 | 5 00 |
| Permit to build wharf, lot A, block 2, Sumas river. | Aug. 12, '10 | 5 00 | | 5 00 |
| Permit for a landing at Little Rapids R. du Lievre. | April 30, '98 | | 70 00 | 70 00 |
| Leave to drain to main service public building. | May 16, '02 | 1 00 | | 1 00 |
| Tract of land and water lot McNair's cove | Dec. 31, '10 | 16 00 | | 16 00 |
| Lot of land west side Sydenham river. | " 31, '10 | 1 00 | | 1 00 |
| Water on Ouellete street, Windsor, Ont. | April 30, '00 | | 240 00 | 240 00 |
| Lot on. | Oct. 8, '10 | | 5 00 | 5 00 |
| " | June 8, '10 | | 1 00 | 1 00 |
| " | Mar. 31, '10 | 10 00 | | 10 00 |
| Right of way over strip of land. | Apr. 27, '10 | 2 00 | | 2 00 |
| Portion of Custom House lot, New Westminster. | " 19, '10 | 1 00 | | 1 00 |
| Water lot. | " 8, '10 | 5 00 | | 5 00 |
| Ground rent. | " 4, '10 | 1 00 | | 1 00 |
| | | 4,819 00 | 2,355 84 | 7,174 84 |

EDW. T. SMITH,
Collector of Public Works Revenue.

1 GEORGE V., A. 1911

DR.

No. 14.—HYDRAULIC and other Rents, &c.—

| Balances due on April, 1908. | Totals. | Number. | Location. | Name of Proprietors. |
|---------------------------------|-----------|---------|----------------------------------|------------------------------------|
| \$ cts. | \$ cts. | | | |
| | | | | LAND SALES—PRINCIPAL ACCOUNT. |
| 12,092 83 | 12,092 83 | 1 | Hamilton and Port Dover Road.. | Choat & Kern..... |
| 433 34 | 433 34 | 2 | Bonner's property, Quebec..... | Timothy Sullivan, now M. Murphy.. |
| 333 34 | 333 34 | 3 | ..... | John Bailey, now Alex. Powell..... |
| 300 00 | 300 00 | 4 | ..... | Abraham Thompson..... |
| 147 80 | 147 80 | 5 | ..... | John Boomer..... |
| 248 40 | 248 40 | 6 | ..... | John Garbatz, now J. C. Nolan..... |
| 154 80 | 154 80 | 7 | ..... | N. H. Bowen..... |
| 600 00 | 600 00 | 8 | ..... | Estate Robert Reid..... |
| 533 33 | 533 33 | 9 | ..... | John Chevalier..... |
| 533 33 | 533 33 | 10 | ..... | Daniel Holden..... |
| 333 33 | 333 33 | 11 | ..... | George Creeley..... |
| 63 00 | 63 00 | 12 | ..... | Thomas McAdam..... |
| 15,573 50 | 15,573 50 | | | |
| | | | | LAND SALES—INTEREST ACCOUNT. |
| 6,298 25 | 6,298 25 | 1 | Hamilton and Port Dover Road.. | Choat & Kern (matured)..... |
| 558 00 | 558 00 | 2 | Bonner's property, Quebec. . . . | Timothy Sullivan, now M. Murphy.. |
| 120 00 | 120 00 | 3 | ..... | John Bailey, now Alex. Powell..... |
| 306 00 | 306 00 | 4 | ..... | Abraham Thompson..... |
| 155 22 | 155 22 | 5 | ..... | John Boomer..... |
| 275 82 | 275 82 | 6 | ..... | John Garbatz, now J. C. Nolan..... |
| 208 95 | 208 95 | 7 | ..... | N. H. Bowen..... |
| 828 00 | 828 00 | 8 | ..... | Estate Robert Reid..... |
| 190 00 | 190 00 | 9 | ..... | John Chevalier..... |
| 298 68 | 298 68 | 10 | ..... | Daniel Holden..... |
| 35 91 | 35 91 | 11 | ..... | George Creeley..... |
| 100 00 | 100 00 | 12 | ..... | Thomas McAdam..... |
| 100 00 | 100 00 | 13 | ..... | Joseph Brook, tenant..... |
| 9,474 83 | 9,474 83 | | | |

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, June 8, 1910.

SESSIONAL PAPER No. 19

—LESSEES' Accounts, 1908-1909—*Concluded.*

CR.

| Description of Property. | Number. | Date to which the account is made up. | Balance transferred to Public Works Department by O.C. of April 27, 1906. | Totals. |
|---|---------|---------------------------------------|---|-----------|
| | | | \$ cts. | \$ cts. |
| Hamilton and Port Dover and Caledonia Bridge | 1 | | 12,092 53 | 12,092 53 |
| Lot No. 1, Wolfe Street | 2 | | 433 34 | 433 34 |
| " 9 " | 3 | | 333 34 | 333 34 |
| " 49 " | 4 | | 300 00 | 300 00 |
| " 73 and 74, Tower Street. | 5 | | 147 80 | 147 80 |
| " 64, Wolfe Street, and 211 and 252 Ware Street. | 6 | | 248 40 | 248 40 |
| " 67 and 68, Monument Street | 7 | | 154 80 | 154 80 |
| " 22 and 23, Wolfe Street | 8 | | 600 00 | 600 00 |
| " 32, Wolfe Street. | 9 | | 333 33 | 333 33 |
| " 65 and 66, Wolfe Street | 10 | | 533 33 | 533 33 |
| " 31, Wolfe Street | 11 | | 333 33 | 333 33 |
| " 135, Church Street. | 12 | | 63 00 | 63 00 |
| | | | 15,573 50 | 15,573 50 |
| Lot No. 1, Wolfe Street | 1 | June 30, 1874. | 6,298 25 | 6,298 25 |
| " 9, " | 2 | May 1, 1889 .. | 558 00 | 558 00 |
| " 49, " | 3 | " | 120 00 | 120 00 |
| " 73 and 74, Tower Street | 4 | " | 306 00 | 306 00 |
| " 64, Wolfe Street, and 211 and 252 Ware Street ... | 5 | " | 155 22 | 155 22 |
| " 67 and 68, Monument Street | 6 | " | 275 82 | 275 82 |
| " 22 and 23, Wolfe Street. | 7 | " | 205 95 | 205 95 |
| " 32, Wolfe Street. | 8 | " | 828 00 | 828 00 |
| " 65 and 66, Wolfe Street | 9 | Nov. 1, 1863 .. | 190 00 | 190 00 |
| " 31, Wolfe Street | 10 | " | 298 68 | 298 68 |
| " 135, Church Street | 11 | " | 35 91 | 35 91 |
| Monument Hotel | 12 | " | 100 00 | 100 00 |
| | 13 | " | 100 00 | 100 00 |
| | | | 9,474 83 | 9,474 83 |

EDW. T. SMITH,

Collector of Public Works Revenue.

1 GEORGE V., A. 1911

No. 13.—Rents, &c, from Minor Public Works.

Dr.

Cr.

| Balance due on April 1, 1909. | Accrued during the year ended March 31, 1910. | Total. | Occupant. | Description of Property. | Paid during the year ended March 31, 1910. | Balance due on March 31, 1910. | Total. |
|-------------------------------------|---|-----------|------------------------------|--|---|--------------------------------------|-----------|
| \$ cts. | \$ cts. | \$ cts. | | | \$ cts. | \$ cts. | \$ cts. |
| 2,600 62 | | 2,600 62 | R. Murdy | Danville bridge | | 2,600 62 | 2,600 62 |
| 8,000 00 | | 8,000 00 | Corporation Galt and Dundas | Dundas and Waterloo road | | 8,000 00 | 8,000 00 |
| 2 00 | 1 00 | 3 00 | North American Telegraph Co. | Government telegraph line between Bath and Amherst | 3 00 | | 3 00 |
| | 25 00 | 25 00 | Grand Trunk Railway Co. | Warton docks | 25 00 | | 25 00 |
| 43 75 | | 43 75 | | Part of building, Portland, N.B. | | 43 75 | 43 75 |
| | 100 00 | 100 00 | Alex Jos. Greene | Building, Ouellette avenue, Windsor, Ont. | 100 00 | | 100 00 |
| 10,646 37 | 126 00 | 10,772 37 | | | 126 00 | 10,644 37 | 10,772 37 |

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, June 8, 1910.EDW. T. SMITH,
Collector of Public Works Revenue.

SESSIONAL PAPER No. 19

No. 15.—QUEBEC WHITE PINE IN CUBIC FEET, 1845 TO 1909.

| YEAR. | SUPPLY. | | | EXPORT. | | STOCKS. | | |
|-------|------------|-----------|------------|-------------------|------------|-----------|--------|------------|
| | Square. | Waney. | Total. | Square and Waney. | | Square. | Waney. | Total. |
| 1845 | 24,223,000 | | 24,223,000 | | | | | |
| 1846 | 24,242,689 | | 24,242,689 | | | | | |
| 1847 | 19,060,880 | | 19,060,880 | | | | | |
| 1848 | 17,402,360 | | 17,402,360 | | | | | |
| 1849 | 18,581,560 | | 18,581,560 | | | | | |
| 1850 | 14,398,000 | | 14,398,000 | 13,040,000 | 5,046,000 | | | 5,046,000 |
| 1851 | 15,418,000 | | 15,418,000 | 15,941,000 | 2,366,000 | | | 2,366,000 |
| 1852 | 27,631,000 | | 27,631,000 | 15,691,000 | 12,711,000 | | | 12,711,000 |
| 1853 | 17,487,000 | | 17,487,000 | 17,399,000 | 9,846,000 | | | 9,846,000 |
| 1854 | 19,648,000 | | 19,648,000 | 19,612,000 | 7,537,000 | | | 7,537,000 |
| 1855 | 13,575,000 | | 13,575,000 | 10,843,000 | 9,513,000 | | | 9,513,000 |
| 1856 | 18,000,000 | | 18,000,000 | 13,993,000 | 11,776,000 | | | 11,776,000 |
| 1857 | 19,618,000 | | 19,618,000 | 19,246,000 | 11,259,000 | | | 11,259,000 |
| 1858 | 14,328,000 | | 14,328,000 | 13,388,000 | 11,290,000 | | | 11,290,000 |
| 1859 | 16,531,000 | | 16,531,000 | 14,822,000 | 12,284,000 | | | 12,284,000 |
| 1860 | 18,564,000 | | 18,564,000 | 18,258,000 | 11,390,000 | | | 11,390,000 |
| 1861 | 15,731,000 | 6,735,000 | 22,466,000 | 19,448,000 | 7,971,000 | 6,347,000 | | 14,318,000 |
| 1862 | 21,628,000 | 748,000 | 22,376,000 | 15,493,000 | 15,355,000 | 3,950,000 | | 19,305,000 |
| 1863 | 21,617,000 | 186,000 | 21,803,000 | 23,147,000 | 13,998,000 | 1,224,000 | | 15,222,000 |
| 1864 | 23,737,000 | 735,000 | 24,472,000 | 20,632,000 | 17,600,000 | 351,000 | | 17,951,000 |
| 1865 | 17,620,000 | 1,247,000 | 18,867,000 | 19,008,000 | 12,427,000 | 348,000 | | 12,775,000 |
| 1866 | 14,386,000 | 2,245,000 | 16,631,000 | 15,541,000 | 10,875,000 | 763,000 | | 11,638,000 |
| 1867 | 16,740,000 | 2,799,000 | 19,539,000 | 14,774,000 | 13,001,000 | 1,965,000 | | 14,966,000 |
| 1868 | 10,029,000 | 2,158,000 | 12,187,000 | 15,279,000 | 7,648,000 | 1,715,000 | | 9,363,000 |
| 1869 | 14,055,000 | 1,973,000 | 16,028,000 | 14,673,000 | 9,263,000 | 1,607,000 | | 10,870,000 |
| 1870 | 12,616,000 | 1,504,000 | 14,120,000 | 14,142,000 | 8,877,000 | 620,000 | | 9,497,000 |
| 1871 | 17,367,000 | 3,418,000 | 20,785,000 | 14,673,000 | 14,001,000 | 1,739,000 | | 15,740,000 |
| 1872 | 11,151,000 | 4,450,000 | 15,601,000 | 15,515,000 | 11,065,000 | 3,618,000 | | 14,683,000 |
| 1873 | 10,443,000 | 3,956,000 | 14,409,000 | 10,580,000 | 12,794,000 | 4,655,000 | | 17,450,000 |
| 1874 | 7,364,000 | 1,829,000 | 9,193,000 | 13,514,000 | 8,211,000 | 4,053,000 | | 12,264,000 |
| 1875 | 9,246,000 | 1,644,000 | 10,890,000 | 10,069,000 | 8,716,000 | 2,684,000 | | 11,400,000 |
| 1876 | 15,994,000 | 3,249,000 | 19,243,000 | 13,883,000 | 12,167,000 | 2,502,000 | | 14,669,000 |
| 1877 | 14,850,000 | 3,630,000 | 18,480,000 | 14,898,000 | 13,894,000 | 2,634,000 | | 16,438,000 |
| 1878 | 7,917,000 | 1,847,000 | 9,764,000 | 8,194,000 | 15,114,000 | 3,180,000 | | 18,294,000 |
| 1879 | 2,511,000 | 1,600,000 | 4,111,000 | 5,300,000 | 12,140,000 | 2,218,000 | | 11,358,000 |
| 1880 | 4,244,000 | 2,236,000 | 6,480,000 | 11,553,000 | 6,197,000 | 797,000 | | 6,994,000 |
| 1881 | 6,029,000 | 3,065,000 | 9,094,000 | 9,102,000 | 4,526,000 | 1,520,000 | | 6,046,000 |
| 1882 | 8,053,000 | 3,127,000 | 11,180,000 | 7,912,000 | 6,532,000 | 3,355,000 | | 9,887,000 |
| 1883 | 7,412,000 | 3,787,000 | 11,199,000 | 10,427,000 | 7,781,000 | 2,759,000 | | 10,540,000 |
| 1884 | 3,707,000 | 2,200,000 | 5,907,000 | 6,048,000 | 7,502,000 | 2,399,000 | | 9,901,000 |
| 1885 | 2,802,000 | 2,877,000 | 5,697,000 | 6,758,000 | 6,651,000 | 2,588,000 | | 9,239,000 |
| 1886 | 3,033,000 | 3,077,000 | 6,110,000 | 4,526,000 | 6,573,000 | 3,267,000 | | 9,840,000 |
| 1887 | 1,169,000 | 2,060,000 | 3,229,000 | 5,127,000 | 4,295,000 | 2,450,000 | | 6,745,000 |
| 1888 | 1,791,000 | 2,029,000 | 3,820,000 | 6,020,000 | 2,580,000 | 1,227,000 | | 3,807,000 |
| 1889 | 4,224,000 | 3,771,000 | 7,995,000 | 6,873,000 | 3,147,000 | 1,914,000 | | 5,061,000 |
| 1890 | 5,083,000 | 3,695,000 | 8,778,000 | 5,408,000 | 4,800,000 | 3,528,000 | | 8,328,000 |
| 1891 | 1,072,000 | 1,731,000 | 2,803,000 | 4,715,000 | 2,944,000 | 2,049,000 | | 4,993,000 |
| 1892 | 2,380,000 | 2,740,000 | 5,120,000 | 5,300,000 | 2,835,000 | 1,618,000 | | 4,453,000 |
| 1893 | 1,121,000 | 3,117,000 | 4,238,000 | 4,062,000 | 2,134,000 | 1,628,000 | | 3,762,000 |
| 1894 | 838,000 | 2,289,000 | 3,127,000 | 3,469,000 | 1,657,000 | 1,611,000 | | 3,268,000 |
| 1895 | 274,000 | 3,086,000 | 3,360,000 | 2,838,000 | 1,091,000 | 2,255,000 | | 3,346,000 |
| 1896 | 316,000 | 2,871,000 | 3,187,000 | 4,252,000 | 537,000 | 1,474,000 | | 2,011,000 |
| 1897 | 833,000 | 4,311,000 | 5,144,000 | 3,773,000 | 483,000 | 2,288,000 | | 2,771,000 |
| 1898 | 1,062,000 | 1,903,000 | 2,965,000 | 3,015,000 | 1,354,000 | 2,452,000 | | 3,806,000 |
| 1899 | 592,000 | 1,793,000 | 2,385,000 | 3,085,000 | 1,148,000 | 1,014,000 | | 2,162,000 |
| 1900 | 571,000 | 1,503,000 | 2,074,000 | 2,755,000 | 805,000 | 506,000 | | 1,301,000 |
| 1901 | 585,000 | 1,447,000 | 2,032,000 | 2,317,000 | 590,000 | 361,000 | | 951,000 |
| 1902 | 384,000 | 1,830,000 | 2,214,000 | 2,445,000 | 396,000 | 261,000 | | 657,000 |
| 1903 | 420,000 | 1,865,000 | 2,285,000 | 2,182,000 | 413,000 | 406,000 | | 819,000 |
| 1904 | 240,000 | 2,256,000 | 2,496,000 | 1,492,000 | 347,000 | 1,269,000 | | 1,616,000 |
| 1905 | 137,000 | 1,211,000 | 1,348,000 | 1,477,000 | 289,000 | 1,174,000 | | 1,463,000 |
| 1906 | 76,720 | 676,600 | 753,320 | 1,857,600 | 81,375 | 267,356 | | 348,731 |
| 1907 | 136,200 | 1,159,960 | 1,296,160 | 1,311,252 | 67,666 | 267,913 | | 335,579 |
| 1908 | 132,560 | 1,060,880 | 1,193,440 | 1,098,779 | 50,776 | 372,681 | | 423,457 |
| 1909 | 66,200 | 699,360 | 765,560 | | | | | |

Department of Public Works,
Ottawa, June 8, 1910.

EDW. T. SMITH,
Collector of Public Works Revenue.

PART VII

MISCELLANEOUS

CONTRACTS LET BY THIS DEPARTMENT.

PROPERTY PURCHASED OR SOLD.

PROPERTY, LEASED TO OR BY THE DEPARTMENT.

CURATOR'S REPORT, NATIONAL ART GALLERY.

NAMES OF CHIEF OFFICERS OF THE DEPARTMENT.

NAMES OF OFFICIALS EMPLOYED ON SLIDES AND BOOMS.

NAMES OF PERSONS EMPLOYED ON GRAVING DOCKS.

NAMES OF ENGINEERS, FIREMEN AND CARETAKERS OF PUBLIC BUILDINGS.

AND THE OFFICIAL CORRESPONDENCE OF THE DEPARTMENT.

FOR THE

FISCAL YEAR ENDED MARCH 31, 1910

DEPARTMENT OF PUBLIC WORKS OF CANADA,

OTTAWA, July 29, 1910.

SIR,—I have the honour to transmit the following statements concerning the transactions of the department during the last fiscal year, with respect to contracts and property, and which are required for insertion in the annual report, 1909-10, viz:—

No. 1. Statement of contracts let by this department during the fiscal year ended March 31, past.

No. 2. Statement of property purchased and sold by the department during the same period.

No. 3. Statement of property leased to and by the said department during the same period; and

No. 4. A list of some of the Public Acts of the Parliament of Canada, passed at the last session, and orders in council having reference to the department.

I have the honour to be, sir,

Your obedient servant,

J. A. CHASSE,

Law Clerk.

R. C. DESROCHERS, Esq.,

Assistant Secretary of the Department of Public Works,
Ottawa, Ont.

STATEMENT

SHOWING

1ST.—CONTRACTS LET BY THE DEPARTMENT OF PUBLIC WORKS OF CANADA, FROM APRIL 1, 1909, TO MARCH 31, 1910.

2ND.—PROPERTY PURCHASED OR SOLD BY THE DEPARTMENT OF PUBLIC WORKS DURING THE FISCAL YEAR ENDED MARCH 31, 1910.

3RD.—PROPERTY LEASED TO AND BY THE DEPARTMENT OF PUBLIC WORKS DURING THE FISCAL YEAR ENDED MARCH 31, 1910.

1 GEORGE V., A. 1911

No. 1.—CONTRACTS let by the Department of Public Works of Canada, from April 1, 1909, to March 31, 1910.

| Works. | Names of Contractors. | Date of Contract. | Amount. |
|--|--|-------------------|------------------------|
| PUBLIC BUILDINGS. | | | \$ cts. |
| <i>Nova Scotia.</i> | | | |
| Amherst, Post Office. Supply of coal..... | Alex. A. Jones. | Aug. 2, 1909 | 250 99 |
| Annapolis " " | A. M. King..... | " 2, 1909 | 11 88 |
| Antigonish " " | James Kenna..... | " 16, 1909 | 166 00 |
| Arichat " " | Isidore LeBlanc, Terrio & Co. | " 19, 1909 | 181 25 |
| Baddeck " " | McKay, MacAskill & Co. | " 4, 1909 | 192 25 |
| Bridgewater " " | The Intercolonial Coal Mining Co., Ltd. | " 3, 1909 | |
| " " Public Building. Interior fittings .. | E. P. McGrath & Co. | April 30, 1909 | 1,342 00 |
| Dartmouth, Post Office. Supply of coal..... | The Acadia Coal Co., Ltd. | Aug. 2, 1909 | 91 12 |
| Digby " " | Wm. Ed. Van Blarcom... .. | " 3, 1909 | 201 08 |
| Glace Bay, Public Building. Granolithic driveway | R. S. Low | June 30, 1909 | Per sq. ft. 0 27 |
| Glace Bay, Public Building. Interior fittings .. | Chappell Bros. & Co., Ltd. | July 27, 1909 | 3,050 00 |
| Halifax, Post Office. Vault door, vestibules, &c. | J. & J. Taylor | " 24, 1909 | 5,990 00 |
| " " Elevators | Otis Fensom Elevator Co., Ltd. | Sept. 1, 1909 | 7,980 00 |
| " Custom House. Dolomont floor..... | Montreal Dolomont Co., Ltd. | " 4, 1909 | 574 20 |
| " Public Building. Heating apparatus.... | G. A. Wootten & Co. | Oct. 6, 1909 | 4,863 00 |
| " Detention Hospital. Supply of coal.... | The Intercolonial Coal Mining Co., Ltd. | Aug. 3, 1909 | 420 36 |
| " New Custom House. " | S. Cunard & Co. | " 7, 1909 | 577 32 |
| " Asst. Rec. Gen'l's. Office " | " | " 7, 1909 | 31 52 |
| " " " " | Wm. Roche | " 3, 1909 | 37 50 |
| " Immigration Building " | S. Cunard & Co. | " 7, 1909 | 524 26 |
| " Examining Warehouse " | " | " 7, 1909 | 197 00 |
| Inverness, Post Office " | The Inverness Railway & Coal Co. | " 9, 1909 | 152 10 |
| Kentville " " | P. E. Lloyd | " 16, 1909 | 257 50 |
| Liverpool " " | F. W. Hatt | " 6, 1909 | 134 40 |
| Lunenburg " " | John B. Young | " 2, 1909 | 197 75 |
| New Glasgow " " | The Acadia Coal Co., Ltd. | " 2, 1909 | 246 81 |
| North Sydney " " | The MacKay Mining Co., Ltd. | " 6, 1909 | 245 00 |
| Pictou " " | The Intercolonial Coal Mining Co., Ltd. | " 3, 1909 | 197 19 |
| " Custom House " | The Intercolonial Coal Mining Co., Ltd. | " 3, 1909 | 225 12 |
| Shelburne, Post Office " | Jas. McGill | " 3, 1909 | 142 22 |
| " " Interior fittings..... | E. P. McGrath & Co. | April 30, 1909 | 1,225 00 |
| " Public Building. Concreting, sod'g, &c. | Hoods & Brooks..... | Sept. 28, 1909 | Sched. |
| " " Supply of electric current..... | Municipality of Shelburne. | Nov. 18, 1909 | Per light p. ann. 3 00 |
| Springhill, Post Office. Supply of coal..... | The Cumberland Ry. & Coal Co., Ltd. | Oct. 2, 1909 | 75 27 |
| Sydney " " | Fred. Rontledge | Aug. 7, 1909 | 243 88 |
| Truro " " | The Acadia Coal Co., Ltd. | " 2, 1909 | 282 50 |
| Westville " " | The Intercolonial Coal Mining Co., Ltd. | " 3, 1909 | 108 54 |
| " " Supply of water | The Town of Westville .. | May 7, 1909 | Per an. 21 00 |
| Windsor " Supply of coal..... | Fred. W. Dimock | Aug. 16, 1909 | 272 92 |
| Yarmouth " " | Killam Bros. | " 4, 1909 | 330 00 |
| " Public Building. Fire escape | Capital Scale, Brass & Iron Foundry Co. | July 20, 1909 | 278 00 |
| " " Elect. light, wiring and fittings | Robert Anderson..... | May 10, 1909 | 697 00 |

SESSIONAL PAPER No. 19

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—Continued.

| Works. | Names of Contractors. | Date of Contract. | Amount. |
|--|--|-------------------|----------|
| PUBLIC BUILDINGS—Continued. | | | 8 cts. |
| <i>Prince Edward Island.</i> | | | |
| Charlottetown, Post Office. Alterations to interior fittings | H. & S. Lowe | April 27, 1909 | 975 00 |
| Charlottetown, Dons. Building. Supply of coal | Pickard & Company | Aug. 3, 1909 | 806 88 |
| Georgetown, Post Office | W. W. Jenkins, Sons & Co | " 5, 1909 | 93 90 |
| " Public Building. Heating apparatus | Stanley Shaw & Reardon | July 10, 1909 | 340 00 |
| Georgetown, Post Office. Fittings | The Berlin Interior & Hardware Co., Ltd. | Sept. 16, 1909 | 790 00 |
| " Custom House. Fittings | Bernard Creamer | Oct. 28, 1909 | 400 00 |
| Montague, Public Building. Supply of coal | Poole & Thompson | Aug. 6, 1909 | 181 99 |
| Souris, Post Office | C. Lyons & Co. | " 3, 1909 | 244 20 |
| Summerside, Post Office | Joseph Read & Co. | " 5, 1909 | 421 09 |
| <i>New Brunswick.</i> | | | |
| Bathurst, Public Building. Supply of coal | B. M. Lannigan | " 7, 1909 | 268 30 |
| Campbellton, Post Office | F. S. Blair & Co. | " 4, 1909 | 442 52 |
| Chatham | The Intercolonial Coal Mining Co., Ltd. | " 3, 1909 | |
| Dalhousie | F. S. Blair & Co. | " 4, 1909 | |
| Fredericton | Patrick Farrell | " 3, 1909 | 255 55 |
| Marysville | " | " 3, 1909 | 149 24 |
| Moncton | The Intercolonial Coal Mining Co., Ltd. | " 3, 1909 | 204 00 |
| <i>New Brunswick.</i> | | | |
| Newcastle, Post Office. Supply of coal | The Intercolonial Coal Mining Co., Ltd. | " 3, 1909 | 209 56 |
| " " " " | The Stothart Mercantile Co., Ltd. | " 14, 1909 | 110 57 |
| St. John West, Post Office. Tower clock | Ferguson & Page | May 28, 1909 | 1,500 00 |
| " Custom House. Supply of coal | J. S. Gibbon & Co. | Aug. 7, 1909 | 1,667 86 |
| " " " " | Francis Kerr & Co. | " 16, 1909 | 84 00 |
| " Post Office | R. P. & W. F. Starr, Ltd. | Oct. 7, 1909 | 634 62 |
| " Savings Bank | " | " 7, 1909 | |
| " Custom House | " | " 7, 1909 | 11 76 |
| " Immigration Building | " | " 7, 1909 | 149 77 |
| " Detention Hospital | " | " 7, 1909 | 24 48 |
| " Post Office | J. S. McGivern | " 7, 1909 | 40 50 |
| " Savings Bank | " | " 7, 1909 | 233 65 |
| " Immigration Building | " | " 7, 1909 | 963 83 |
| " New Detention Bld'g | " | " 7, 1909 | 265 50 |
| St. Stephen, Post Office. Supply of coal | W. C. Purves | Aug. 4, 1909 | 162 50 |
| Sussex, Public Building | T. H. Brown & Son | " 11, 1909 | 314 00 |
| Tracadie Lazaretto | B. M. Lannigan | " 7, 1909 | 1,060 66 |
| Woodstock, Public Building | W. F. Dibblee & Son | " 30, 1909 | 286 32 |
| <i>Quebec.</i> | | | |
| Acton Vale, Post Office. Supply of coal | S. E. Desmarais & Co. | Aug. 6, 1909 | 113 99 |
| Aylmer | C. P. Wright | " 21, 1909 | 194 32 |
| " Concrete sidewalks | Town of Aylmer | Sept. 28, 1909 | 365 00 |
| Berthierville | F. O. Lamarche | Aug. 14, 1909 | 72 00 |
| Buckingham | E. M. Lapierre | " 14, 1909 | 115 11 |
| Chicoutimi | Côté, Boivin & Cie. | " 5, 1909 | 320 88 |
| Coaticook | W. C. Webster & Son | " 9, 1909 | 222 75 |
| Cookshire, Public Building. Interior fittings | E. P. McGrath & Co. | " 30, 1909 | 1,219 00 |
| " Sidewalks &c. | J. W. Grégoire | Sept. 1, 1909 | 495 50 |
| Dundee, Custom House. Supply of coal | Allen J. Matthews | Aug. 9, 1909 | 81 00 |
| Drummondville, Post Office | Antoine Cadoret | " 10, 1909 | 82 98 |
| Farnham | Berthiaume & Lanoue | " 6, 1909 | 69 00 |
| Fraserville | Nap. Dion | " 9, 1909 | 396 80 |

SESSIONAL PAPER No. 19

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—Continued.

| Works. | | Names of Contractors. | Date of Contract. | Amount. |
|-----------------------------|---|--|-------------------|-------------|
| PUBLIC BUILDINGS—Continued. | | | | \$ cts. |
| Quebec. | | | | |
| Point St. Charles. | Postal Station 'D.' Electric wiring and fittings.... | The Empire Elec. & Mfg. Co. of Ottawa, Ltd. | Aug. 30, 1909. | 1,192 00 |
| " | Postal Station 'D.' Heating apparatus | Alex. MacKay & Co. | Nov. 17, 1909. | 1,860 00 |
| " | Postal Station 'D.' Interior fittings..... | D. H. Langlois & Co. | Dec. 9, 1909. | 1,595 00 |
| Quebec. | Louise docks. Lavatories for Immigration Building..... | C. A. Vézina..... | Apr. 26, 1900. | 1,325 00 |
| " | Examining Warehouse. Wiring and fittings..... | The Empire Elec. & Mfg. Co. of Ottawa, Ltd. | May 10, 1909. | 984 00 |
| " | Custom House. Wiring and fittings.... | The Empire Elec. & Mfg. Co. of Ottawa, Ltd. | " 10, 1909. | 1,849 00 |
| " | Post Office. " | R. Anderson..... | Jan. 13, 1910. | 2,944 00 |
| " | Examining warehouse. Alterations to wiring and fittings..... | Jinchereau & Lamonde... .. | " 27, 1910 | 2,997 00 |
| " | " " Alterations to wiring and fittings..... | The Empire Elec. & Mfg. Co. of Ottawa, Ltd. | Feb. 3, 1910. | 896 00 |
| " | Examining Warehouse. Freight elevator (St. Roch) Post Office. wiring and fittings | Otis Fensom Elevator Co. | Mar. 3, 1910. | 2,180 00 |
| " | " " Heating apparatus | The Empire Elec. & Mfg. Co. of Ottawa, Ltd. | Oct. 4, 1909. | 919 00 |
| " | " " Verandah | Vandry & Matte..... | " 25, 1909. | 1,032 00 |
| " | " " Supply of coal..... | Jinchereau & Lamonde... .. | Dec. 10, 1909. | 1,086 00 |
| " | Culler's Office. " | The Canadian Import Co. | Aug. 6, 1909. | 47 63 |
| " | Custom House. " | " " | " 6, 1909. | 209 13 |
| " | Marine Agency. " | " " | " 6, 1909. | 708 30 |
| " | Custom House. " | " " | " 6, 1909. | 289 50 |
| " | Immigration Office. " | " " | " 6, 1909. | 367 49 |
| " | " " " | " " | " 6, 1909. | 30 37 |
| " | Post Office. " | " " | " 6, 1909. | 340 45 |
| " | Gov. General's Quarters. " | " " | " 6, 1909. | 615 67 |
| " | Weights and Measures. " | " " | " 6, 1909. | 549 58 |
| Richmond. | Post Office. " | " " | " 6, 1909. | 45 71 |
| Rimouski. | " " " | J. D. Smith | " 5, 1909. | 238 36 |
| " | " " " | H. G. Lepage..... | " 20, 1909. | 341 83 |
| " | Armoury. Construction of | Dumont & McLean..... | Jan. 4, 1910. | 8,150 00 |
| Roberval. | Immigration Building. Supply of wood | L. E. Otis..... | Apr. 17, 1909. | 500 00 |
| St. Henri. | Post Office. Supply of coal..... | The T. F. Moore Co. | Aug. 9, 1909. | 93 63 |
| St. Hyacinthe. | Post Office. Supply of coal..... | Ant. Cadoret | " 18, 1909. | 136 87 |
| " | Inland Revenue. " | " " | " 18, 1909. | |
| St. Jérôme. | Post Office. " | Joseph Elie..... | " 5, 1909. | 219 60 |
| St. Johns. | " " " | D. Godin & Cie..... | " 5, 1909. | 250 65 |
| " | Customs Parcels Offices. Interior fittings | D. H. Langlois & Co. | Oct. 11, 1909. | 475 00 |
| " | Public Building. Tower clock | J. H. Racicot..... | Feb. 16, 1910. | 1,700 00 |
| " | Custom House. Wiring and fittings. | M. Rubenstein..... | " 8, 1910. | 495 00 |
| " | Old Post Office. Lighting..... | St. John Elec. Light Co., Ltd. | Mar. 21, 1910 | p.k.w. 0 10 |
| " | Post Office. Enlargement of dial openings | Peter O'Cain..... | Feb. 8, 1910. | 325 00 |
| St. Louis du Mile End. | Post Office. Supply of coal | The T. F. Moore Co. | Aug. 9, 1909. | 186 39 |
| " | " " Wiring and fittings | W. J. O'Leary & Co..... | June 18, 1909. | 275 00 |
| Sherbrooke. | Drill Hall. Electric fixtures..... | McCallum & Co..... | July 12, 1909. | 879 25 |
| " | " " Interior fittings | E. P. McGrath & Co..... | Oct. 7, 1909. | 3,995 00 |
| " | Custom House. " | Sherbrooke Construction Co. | " 7, 1909. | 230 00 |
| " | Armouries. Bowling alleys | Ketchum & Co..... | Nov. 3, 1909. | 1,050 60 |
| " | Post Office. Supply of Coal. | La Cie. Coderre & Fils | Aug. 7, 1909. | 431 29 |
| Sorel. | " " " | Adolphe Plante..... | " 9, 1909 | 342 00 |
| Terrebonne. | Post Office. Supply of coal..... | J. O. J. Duguay..... | " 6, 1909. | 169 76 |
| Thetford Mines. | " " " | Alphonse Blais | " 5, 1909. | 173 89 |
| Three Rivers. | Public Buildings. Retaining wall. | J. A. McLaughlin & T. P. Charleson..... | Sept. 15, 1909. | 8,490 00 |

1 GEORGE V., A. 1911

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—Continued.

| Works. | Names of Contractors. | Date of Contract. | Amount. |
|---|--|-------------------|-------------------------|
| PUBLIC BUILDINGS—Continued. | | | \$ cts. |
| Quebec—Concluded. | | | |
| Valleyfield, Public Buildings. Tower clock..... | J. A. Trottier..... | Jan. 25, 1910 | 1,635 00 |
| " " " Supply of coal..... | Besner & Chasle..... | Aug. 5, 1909 | 326 27 |
| Victoriaville, Post Office. "..... | Octave Gaudet..... | " 6, 1909 | 151 09 |
| " " " Fittings, alterations to..... | Joseph Audet..... | June 10, 1909 | 675 06 |
| Ontario. | | | |
| Alexandria, Post Office. Supply of coal..... | Joseph Elie..... | Aug. 5, 1909 | 183 76 |
| Arnprior, " "..... | J. S. Moir..... | " 9, 1909 | 264 20 |
| Almonte, Public Building. "..... | Taylor Bros..... | " 7, 1909 | 214 41 |
| Amherstburg, Post Office. "..... | John McGee..... | " 10, 1909 | 175 50 |
| Barrie, " "..... | John G. Scott..... | " 10, 1909 | 205 50 |
| Belleville, " "..... | N. Allen..... | " 10, 1909 | 500 00 |
| Berlin, Post Office. Supply of steam for heating..... | The Berlin Central Heating Co., Limited..... | June 10, 1909 | Per 1,000 units 65 cts. |
| Bowmanville, Post Office. Supply of coal..... | McLennan & Company..... | Aug. 7, 1909 | 142 25 |
| Brampton, " "..... | D. Frutley..... | " 7, 1909 | 202 46 |
| Brantford, " "..... | Wilson Coal Company..... | " 7, 1909 | 449 70 |
| Bridgeburg, " "..... | Isaac White..... | " 26, 1909 | 186 00 |
| Brockville, " "..... | The Central Canada Coal Company..... | Sept. 1, 1909 | 416 82 |
| Carleton Place, " "..... | Taylor Bros..... | Aug. 23, 1909 | 139 60 |
| Chatham, " "..... | A. R. Crow..... | " 10, 1909 | 204 95 |
| Clinton, " "..... | James Hamilton..... | " 25, 1909 | 216 60 |
| Cobourg, " "..... | E. A. Duncan..... | " 10, 1909 | 266 00 |
| Cornwall, " "..... | E. F. Mulhern & Company..... | " 17, 1909 | 206 00 |
| " " Public Building. Fire escapes..... | Hernaston & Comvie..... | June 24, 1909 | 348 00 |
| " " " Alt. to entr. doors, etc..... | Henry Williams..... | Oct. 8, 1909 | 573 00 |
| Deseronto, Post Office. Supply of coal..... | The Rathbun Company..... | Aug. 12, 1909 | 276 00 |
| Dundas, " "..... | James A. Sturrock..... | " 10, 1909 | 52 00 |
| Fort William, " "..... | James Murphy..... | " 13, 1909 | 426 25 |
| " " " Wiring and fittings..... | The Western Electric & Supply Company..... | July 24, 1909 | 480 00 |
| " " Public Building. Heating system..... | Bennett & Wright Co..... | Sept. 11, 1909 | 350 00 |
| " " Post Office. Interior Fittings..... | The Oshawa Interior Fittings Company..... | Feb. 12, 1910 | 1,973 00 |
| Galt, Post Office. Supply of coal..... | J. D. Burns..... | Aug. 11, 1909 | 221 90 |
| Gananoque, P. O. and Cust. House. Sup. of coal..... | Taylor & Green Coal and Lumber Company..... | " 11, 1909 | 267 55 |
| Glencoe, Public Building. Heating apparatus..... | Nagle & Mills..... | May 11, 1909 | 995 00 |
| " " Post Office. Supply of coal..... | E. Huston & Company..... | Aug. 12, 1909 | |
| " " Public Building. Cement sidewalks..... | J. H. McFarlane..... | Sept. 7, 1909 | 870 00 |
| " " " Interior fittings..... | The Chs. Rogers & Son Co. Limited..... | Oct. 21, 1909 | 1,030 00 |
| " " Armoury Building. Electric wiring etc..... | The Commercial Electric Company..... | " 21, 1909 | 640 00 |
| Goderich, Post Office. Supply of coal..... | Peter McEwan Estate..... | Aug. 26, 1909 | 260 09 |
| Guelph, " "..... | M. F. Cray..... | " 10, 1909 | 322 66 |
| " " Armoury. Wiring and fixtures..... | F. R. J. Macpherson Co., Ltd..... | May 11, 1909 | 885 00 |
| " " " Interior fittings..... | The Barton & Baldwin Co., Limited..... | " 25, 1909 | 3,300 00 |
| Hamilton, Post Office. Supply of coal..... | Thos. Myles Sons Ltd..... | Aug. 10, 1909 | 970 20 |
| " " Ex'g. Warehouse. "..... | Thos. Myles Sons Ltd..... | " 10, 1909 | |
| " " Weights & Measures. Supply of coal..... | Thos. Myles Sons Ltd..... | " 10, 1909 | |
| Hawkebury, Public Building. "..... | E. A. Hall..... | " 30, 1909 | 113 40 |
| Ingersoll, " "..... | M. E. Scott..... | " 12, 1909 | 224 00 |
| " " " "..... | Geo. G. Barrons..... | " 12, 1909 | 4 36 |
| Kingardine, " "..... | John Adams..... | " 11, 1909 | 218 38 |
| " " Post Office. Wiring and fittings..... | Hall & Dollery Electric Co..... | June 12, 1909 | 620 00 |
| " " Public Building. Heat. Apparatus..... | The Keith & Fitzsimons Co. Limited..... | Sept. 4, 1909 | 968 00 |
| " " " Interior fittings..... | The Chs. Rogers & Son Co. Limited..... | Oct. 1, 1909 | 980 00 |

SESSIONAL PAPER No. 19

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—Continued.

| Works. | Names of Contractors. | Date of Contract. | Amount. |
|---|--|-------------------|----------------|
| PUBLIC BUILDINGS—Continued. | | | \$ cts. |
| <i>Ontario.</i> | | | |
| Kingston, Custom House. Supply of coal..... | Patrick Walsh | Aug. 9, 1909 | 357 80 |
| " Post Office. " | Patrick Walsh | " 9, 1909 | 408 00 |
| " Inland Revenue " | Patrick Walsh | " 9, 1909 | 353 60 |
| " R.M.C. Stables. Wiring and fittings.. | Halliday Electric Company | " 21, 1909 | 398 00 |
| " " Heating apparatus.. | Elliott Bros. | Oct. 29, 1909 | 848 00 |
| " Military Stores Bldg. Int. fittings .. | W. J. Chapman | Jan. 26, 1910 | 2,165 00 |
| Leamington, Public Building. Wiring & fittings. | The Commercial Electric Company | Oct. 7, 1909 | 620 00 |
| Lindsay, " Supply of coal..... | McLennan & Company | Aug. 10, 1909 | 126 86 |
| " " " | Jos. Maunder & Son..... | " 10, 1909 | 127 50 |
| London, Custom House & Post Office. Supply of coal | The Connell Anthracite Mining Company, Ltd. | " 21, 1909 | 1,604 16 |
| Markham, Post Office. Interior fittings..... | E. P. McGrath & Co. | Oct. 7, 1909 | 724 50 |
| Napanee, Public Building. Supply of coal. | Chs. Stevens | Aug. 12, 1909 | 135 00 |
| " " " | F. E. VanLoven | " 16, 1909 | 135 00 |
| Niagara Falls, " " | John E. Hutchings & Co. | " 9, 1909 | 247 39 |
| North Bay " " | Lindsay & McCluskey..... | " 12, 1909 | 375 92 |
| " Post Office. Addition to fittings .. | Wm. N. Snyder | May 28, 1909 | 805 20 |
| " Public Building. Interior fittings..... | J. T. Schell | Aug. 28, 1909 | 1,087 50 |
| Orangeville, " Supply of coal..... | Clarke & Hannah..... | " 10, 1909 | 163 41 |
| Orillia, " " | The Tait-Carrs Lumber Co. | " 13, 1909 | 238 75 |
| Oshawa, " " | David Keith | " 13, 1909 | 63 00 |
| " " " | D. Drew & Son..... | " 6, 1909 | 63 00 |
| " " " | Everson & Farewell | " 6, 1909 | 63 00 |
| Ottawa, Experimental Farm. " | The C.C. Ray Co., Ltd. | July 29, 1909 | 1,580 29 |
| " Agricultural Dept. Metallic fittings .. | Office Specialty Mfg. Co. Ltd. | May 15, 1909 | 1,585 00 |
| " Printing Bureau. " " | Office Specialty Mfg. Co. Ltd. | June 1, 1909 | 3,675 00 |
| " Traffic Room. Steel filing cabinet..... | Office Specialty Mfg. Co. Ltd. | " 25, 1909 | 1,317 00 |
| " Marine and Fisheries Dept. Metallic fit. | The Eclipse Mfg. Co. Ltd. | " 25, 1909 | 1,609 00 |
| Experimental Farm, Office and Museum. Heating apparatus..... | M. M. O'Connell..... | July 5, 1909 | 1,397 93 |
| " Public Buildings. Supply of coal..... | John Heney & Son..... | " 6, 1909 | 45,144 08 |
| " Seybold Building. Elevator..... | Otis Fenson Elevator Co. Ltd. | June 26, 1909 | 2,500 00 |
| " Victoria Museum. Heating apparatus..... | Geo. Goodwin | July 12, 1909 | 48,000 00 |
| " " Elevators..... | " | " 12, 1909 | 42,000 00 |
| " " Ventilation system..... | " | " 12, 1909 | 27,460 00 |
| " " Wiring for elevators, etc | " | " 12, 1909 | 15,000 00 |
| " Interior Dept. Metallic fittings..... | L. W. Hutchison..... | " 5, 1909 | 919 00 |
| " Royal Mint. Metal cabinet | The Eclipse Mfg. Co. Ltd. | " 10, 1909 | 1,797 00 |
| " Mines Branch. Fuel testing plant..... | Doran & Devlin..... | " 13, 1909 | 13,400 00 |
| " Public Buildings. Supply of ice..... | Mary Daoust | " 28, 1909 | 100 lbs 15 1/2 |
| " Agriculture Dept. Standing steel desk. | Eclipse Mfg. Co., Ltd. | " 12, 1909 | 395 00 |
| Interior Dept. Lands patent branch. Steel case..... | Office Spe'ty Mfg. Co. Ltd. | Aug. 21, 1909 | 635 00 |
| " Rideau Hall. Improvements..... | Castle & Son..... | Sept. 1, 1909 | 1,600 00 |
| " Mint. Refinery for the | M. J. Whelan & J. O'Leary .. | " 7, 1909 | 31,747 00 |
| " Gov. Gen'l. Sec. Office. Metallic fittings. | The Eclipse Mfg. Co. Ltd. | Aug. 31, 1909 | 1,335 00 |
| " Privy Council, Tower room. Steel fittings | " | Sept. 13, 1909 | 5,172 00 |
| " Art Gallery. Terra Cotta partitions..... | Geo. Goodwin..... | Oct. 10, 1909 | 2,650 00 |
| " Experimental Farm. Residence of Chief Astronomer. Heat apparatus..... | Martel & Langelier..... | " 6, 1909 | 975 00 |
| " House of Commons. Post Office fittings | R. A. Sproule..... | " 8, 1909 | 1,570 00 |
| " Customs Dept. Steel cases | Eclipse Mfg. Co. Ltd. | July 22, 1909 | 163 50 |
| " Marine Dept. Records room. Filing cabinets..... | " | June 25, 1909 | 1,609 00 |
| " N.W.M.P. room No. 47. Steel fittings..... | " | Sept. 23, 1909 | 670 00 |
| " Interior Dept. Registration branch. Steel fittings..... | Office Spe'ty Mfg. Co. Ltd. | " 18, 1909 | 4,595 00 |
| " Public W. Dept. Records room. Steel fit. | " | Sept. 18, 1909 | 1,665 00 |

1 GEORGE V., A. 1911

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—Continued.

| Works. | Names of contractors. | Date of Contract. | Amount. |
|---|-------------------------------------|-------------------|---------------|
| PUBLIC BUILDINGS—Continued. | | | \$ cts. |
| Ontario. | | | |
| Ottawa, House of Com. Hansard room. Ventil'on | Canadian Buffalo Forge Co. Ltd. | Dec. 17, 1909 | 1,600 00 |
| " Agriculture Dept. Metallic shelves... | The Eclipse M'fg. Co. Ltd | Sept. 27, 1909 | 2,595 00 |
| " Royal Mint. Vault doors. | Goldie & McCullough Co. Ltd | Dec. 28, 1909 | 3,050 00 |
| " Archives' Buil'g. Library. Metal shelves | The Eclipse M'fg. Co. Ltd | Jan. 13, 1910 | 3,342 00 |
| " Rideau Hall. Supply of ice. | Geo. E. Kingsbury | Feb. 5, 1910 | p. block 0 10 |
| " Royal Mint. Refinery building. Elevator | Otis Fenson Elevator Co. Ltd | Feb. 10, 1910 | 2,700 00 |
| " Parl't grounds. Erection of monuments. | | | |
| " Hon. Geo Brown & T. D'Arcy McGee | Geo. W. Hill | Mar. 28, 1910 | 20,000 00 |
| Owen Sound, Post Office. Supply of Coal. | A. J. Creighton | Aug. 25, 1909 | 316 36 |
| " " Public Building. Interior fittings. | J. T. Schell | May 25, 1909 | 2,397 00 |
| " " " Electric fixtures. | Keith & Fitzsimmons Co. Ltd | June 12, 1909 | 567 00 |
| Paris, " " Supply of coal. | Geo. E. Taylor | Aug. 12, 1909 | 153 75 |
| Parkhill, " " Elec. wiring &c. | The Commercial Ele. Co. | Oct. 7, 1909 | 560 00 |
| " " " Raising of roof. | Leslie & McNeil | " 2, 1909 | 360 00 |
| " " " Heating apparatus | McDonald & Henry | " 18, 1909 | 888 00 |
| " " " Supply of coal. | W. H. Mark & Co. | Sept. 18, 1909 | 140 00 |
| " " Public Building. Alter'ns and add'ns to | Leslie & McNeill | July 30, 1909 | 1,400 00 |
| Pembroke, Post Office. Supply of coal. | Dunlop & Co. | Aug. 10, 1909 | 236 31 |
| " " Interior fittings. | R. A. Sproule | Dec. 30, 1909 | 770 00 |
| Peterborough, Post Office. Supply of coal. | Weir & O'Brien | Aug. 11, 1909 | 252 56 |
| " " Armoury. Bowling alleys. | Ketchum & Co., Ltd. | July 2, 1909 | 1,050 00 |
| " " " Interior fittings. | Edmund Wand | Aug. 2, 1909 | 6,600 00 |
| " " Drill Hall. Grading, sodding, etc. | James Bogue | " 19, 1909 | 4,360 00 |
| Petrolia, Post Office. Supply of coal | Parker Coal Company | " 11, 1909 | 163 90 |
| Port Arthur, Post Office | Louis Walsh Coal Co. | " 16, 1909 | 400 00 |
| Port Hope " " | J. M. Rosevear & Co. | " 10, 1909 | 283 80 |
| Pictou " " | Wm. H. Luke | " 28, 1909 | 222 75 |
| Prescott " " | James Buckley | " 10, 1909 | 186 00 |
| Renfrew " " | James Ward | " 23, 1909 | 30 38 |
| " " Public Building. Heating apparatus. | John Conley | April 2, 1909 | 987 00 |
| " " " Interior fittings | E. P. McGrath & Co. | Nov. 11, 1909 | 1,795 00 |
| Sandwich " " Supply of coal. | J. Kowinsky & Co. | Aug. 14, 1909 | 139 59 |
| Sarnia, Post Office | W. A. Brown | Sept. 22, 1909 | 290 60 |
| Sault Ste. Marie, Post Office | The Sault Ste Marie & Coal Co. | Aug. 21, 1909 | 1,203 47 |
| Simcoe, Public Building. Interior fittings. | The Burton & Baldwin M'fg Co., Ltd. | " 28, 1909 | 900 00 |
| " " " Lighting supplies. | J. Austin & Co. | Oct. 29, 1909 | 292 30 |
| " " Custom House. Fittings. | Schultz Bros. | " 29, 1909 | 178 00 |
| Smith's Falls, Post Office. Supply of coal. | Foster & Co. | Aug. 25, 1909 | 166 25 |
| Stratford, Public building | E. Burdett | " 11, 1909 | 373 24 |
| Strathroy, Post Office | R. Nicholson | " 11, 1909 | 191 40 |
| St. Catharines, Post Office. Interior fittings | The Oshawa Interior Fitting Co. | Feb. 9, 1910 | 973 00 |
| St. Mary's " " Supply of coal. | James Armstrong | Aug. 11, 1909 | 217 60 |
| St. Thomas. " " | Scarrow & Co. | " 20, 1909 | 261 00 |
| Toronto, Meteorological Building. Steel fittings. | Office Specialty M'fg Co. | Feb. 16, 1910 | 2,900 00 |
| " " " Covering dome. | Brown & Love | June 17, 1909 | 1,650 00 |
| " " Post Office. Alterations, etc., to. | Samuel Young | Jan. 24, 1910 | 42,795 00 |
| " " Armoury. Interior fittings. | M. A. Pigott & Son | " 29, 1910 | 8,400 00 |
| " " Observatory. Electric fixtures. | Bennett & Wright | Sept. 7, 1909 | 521 00 |
| " " Junction Post Office. Supply of coal. | The Elias Rogers Co., Ltd. | " 8, 1909 | 132 34 |
| " " Custom House " " | " " " | " 8, 1909 | 658 12 |
| " " Examining Warehouse. Supply of coal. | " " " | " 8, 1909 | 783 64 |
| " " Post Office " " | " " " | " 8, 1909 | 851 48 |
| " " Postal Station "C" " " | " " " | " 8, 1909 | 190 03 |
| " " Postal Station "F" " " | " " " | " 8, 1909 | 216 69 |
| " " Revenue Office " " | " " " | " 8, 1909 | 214 18 |
| Trenton, Post Office | J. W. Jaques | Aug. 12, 1909 | 260 00 |
| Walkerton " " | George Brothers | " 16, 1909 | 205 44 |
| Welland " " | Sam. L. Lambert | " 17, 1909 | 216 42 |

SESSIONAL PAPER No. 19

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—Continued.

| Works. | Names of Contractors. | Date of Contract. | Amount. |
|--|---|-------------------|---------------------|
| PUBLIC BUILDINGS—Continued. | | | \$ cts. |
| Ontario—Concluded. | | | |
| Welland, Public Build'g. Sidewalks, grading, etc. | W. J. Sommerville..... | Oct. 8, 1909 | Schedule of prices. |
| " " Supply of current . . . | Welland Electric Co. . . | " 13, 1909 | Schedule of prices. |
| " " Interior fittings..... | H. Pringle..... | Nov. 22, 1909 | 1,586 00 |
| " " Elect. light wir'g & fit | J. Culley and H. T. Breay. | June 18, 1909 | 1,025 00 |
| " " Heating apparatus..... | S. P. Gourley..... | " 17, 1909 | 1,057 00 |
| Whitby, Public Building. Supply of coal..... | E. Richard Blow..... | Aug. 9, 1909 | 99 00 |
| " " " " " " " " " " | J. H. Downey & Co. | " 9, 1909 | 99 00 |
| " " Post Office. Interior fittings..... | Gay & Sons..... | Feb. 4, 1910 | 1,581 00 |
| " " " " " " " " " " | W. J. Trick..... | Sept. 1, 1909 | 553 00 |
| " " " " " " " " " " | Martel & Langelier..... | Oct. 6, 1909 | 990 00 |
| Wingham, Post Office. Supply of coal..... | J. A. McLean..... | Aug. 16, 1909 | 231 48 |
| Windsor, Public Building " " " " " " " " " " | J. Kowinsky & Co. | " 14, 1909 | 29 05 |
| " " " " " " " " " " | F. X. Scully..... | " 12, 1909 | 25 20 |
| " " " " " " " " " " | J. T. Hurley..... | " 12, 1909 | 336 60 |
| Woodstock " " " " " " " " " " | The McIntosh Coal Co. | " 11, 1909 | 271 85 |
| Manitoba. | | | |
| Brandon, Immigration Building. Supply of coal. | Thomas E. Elviss..... | Sept. 21, 1909 | 363 14 |
| " " Post Office. Supply of coal..... | Barclay & O'Hara..... | " 21, 1909 | 861 27 |
| " " Experimental Farm. Supply of coal..... | The Canadian Coal and Commission Company..... | Aug. 12, 1909 | 275 14 |
| " " Armory. Interior fittings..... | E. C. Higgins..... | May 25, 1909 | 1,029 25 |
| Dauphin. Post Office. Supply of coal..... | Harstone Bros..... | Aug. 17, 1909 | 342 47 |
| " " Public Building. Heating apparatus..... | McDonald & Voigt..... | April 3, 1909 | 1,774 00 |
| " " " " " " " " " " | Town of Dauphin..... | May 20, 1909 | 900 00 |
| " " Dom. Lands. Filing cabinet..... | The Office Specialty Mfg. Co., Ltd..... | Oct. 12, 1909 | 1,395 00 |
| " " Post Office. Interior fittings..... | Oshawa Interior Fitting Co. | Feb. 23, 1910 | 1,243 00 |
| Emerson. Public Building. Heating apparatus. | Cotter Bros., Ltd..... | Sept. 1, 1909 | 1,350 00 |
| " " Quar. Station. Stable, office and shed..... | E. McDougall..... | Oct. 21, 1909 | 2,085 00 |
| " " Post Office. Interior fittings..... | The Oshawa Interior Fitting Co..... | Dec. 6, 1909 | 1,793 00 |
| Neepawa " " Supply of coal . . . | D. E. Adams Coal Co., Ltd. | Aug. 17, 1909 | 225 66 |
| " " " " " " " " " " | The Oshawa Interior Fitting Co..... | Oct. 5, 1909 | 1,993 00 |
| Portage la Prairie. Public Building. Supply of coal. | Chs. J. Sharp..... | Aug. 16, 1909 | 518 83 |
| " " " " " " " " " " | Windatt & Company..... | " 16, 1909 | 417 17 |
| St. Boniface. Post Office. " " " " " " " " " " | Harstone Bros..... | Sept. 8, 1909 | 237 50 |
| " " " " " " " " " " | D. E. Adams Coal Co., Ltd. | " 8, 1909 | 210 42 |
| Selkirk. Public Building. Elect. wirings and fittings..... | The Star Elect. Co..... | June 4, 1909 | 318 00 |
| West Selkirk. Post Office. Supply of coal..... | Thos. Reid..... | Aug. 14, 1909 | 348 65 |
| Winnipeg. Ex'g. Warehouse. Elect. wiring and fittings..... | The Star Electric Co..... | May 14, 1909 | 3,700 00 |
| " " Imm'g. Building. Cleaning, etc..... | J. W. Morley..... | " 22, 1909 | 2,590 00 |
| " " Ex'g. Warehouse. Heating apparatus..... | Cotter Bros., Ltd..... | July 12, 1909 | 5,820 60 |
| " " Old Post Office. Alterations to..... | J. McDiarmid Co., Ltd..... | Jan. 21, 1910 | 41,000 00 |
| " " Immigration Building. Supply of coal..... | Harstone Bros..... | Sept. 8, 1909 | " |
| " " Hospital. " " " " " " " " " " | Harstone Bros..... | " 8, 1909 | 3,149 06 |
| " " Ex'g. Warehouse. " " " " " " " " " " | Harstone Bros..... | " 8, 1909 | 264 48 |
| " " New Post Office. " " " " " " " " " " | Harstone Bros..... | " 8, 1909 | 762 77 |
| " " Old Post Office. " " " " " " " " " " | D. E. Adams Coal Co., Ltd. | " 8, 1909 | 2,452 97 |
| " " Custom House. " " " " " " " " " " | D. E. Adams Coal Co., Ltd. | " 8, 1909 | 765 26 |
| " " Indian Office and Crown Timber. Sup- ply of coal..... | D. E. Adams Coal Co., Ltd. | " 8, 1909 | " |
| " " Postal Station "B." Supply of coal..... | D. E. Adams Coal Co., Ltd. | " 8, 1909 | 220 82 |
| " " New Post Office. " " " " " " " " " " | D. E. Adams Coal Co., Ltd. | " 8, 1909 | 1,614 91 |

1 GEORGE V., A. 1911

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—Continued.

| Works. | Names of Contractors. | Date of Contract. | Amount. |
|--|--|-------------------|-----------|
| PUBLIC BUILDINGS—Continued. | | | \$ cts. |
| <i>Saskatchewan.</i> | | | |
| Estevan. Post Office. Supply of coal | Duncan & McNeil | Sept. 10, 1909 | |
| " " Interior fittings | J. T. Schell Mfg. Co. | March 8, 1910 | 1,149 00 |
| " Public Building. Heating apparatus | Municipal Light Heat & Power Co., Ltd. | Oct. 27, 1909 | 1,673 84 |
| " " Elect. wiring and fittings | North Western Elect. Co., Ltd. | Nov. 6, 1909 | 1,068 00 |
| Humboldt. Dom. Lands Office. Steel fittings | The Eclipse Mfg. Co., Ltd. | Jan. 26, 1910 | 1,225 00 |
| Indian Head. Exper. Farm. Supply of coal | Hitchcock & McCulloch | Sept. 3, 1909 | 465 50 |
| " Forest Nursery Station. " | " " | " 3, 1909 | 201 40 |
| " " " " " | Hunter, Cantelon & Co. | Aug. 18, 1909 | 206 92 |
| " Exper. Farm. " | " " | " 18, 1909 | 199 44 |
| Lloydminster. Immig. Hall. " | Hitchcock & McCulloch | Sept. 3, 1909 | 89 50 |
| Maple Creek. Post Office. " | Hitchcock & McCulloch | " 3, 1909 | 247 50 |
| " Public Building. Interior fittings | The Oshawa Interior Fitting Co. | June 23, 1909 | 1,815 09 |
| Moose Jaw. Post Office. Supply of coal | Hitchcock & McCulloch | Sept. 3, 1909 | 815 20 |
| North Battleford. Immig. Hall. Elect. wiring | Belland Stewart | March 16, 1910 | 43 60 |
| Prince Albert. Penitentiary. Pump for | General Supply Co. | June 25, 1909 | 1,380 45 |
| " " Workshop | Saskatchewan Building & Construction Co., Ltd. | Sept. 7, 1909 | 55,490 00 |
| " " Pump house | Saskatchewan Building & Construction Co., Ltd. | Dec. 21, 1909 | 2,287 00 |
| Regina. Custom House. Fittings | The Western Mfg. Co., Ltd. of Regina | July 12, 1909 | 3,675 00 |
| " " Vault fittings | Eclipse Mfg. Co., Ltd. | " 26, 1909 | 350 00 |
| " Post Office. Supply of coal | The Smith & Ferguson Co. | Aug. 18, 1909 | 100 30 |
| " Dom. Lands Office. " | " " | " 18, 1909 | 83 92 |
| " Post Office. " | L. A. Rounding | " 18, 1909 | 1,268 93 |
| " Dom. Lands Office. " | " " | " 18, 1909 | 533 11 |
| " Immig. Building. " | L. A. Rounding | " 18, 1909 | 316 77 |
| Saskatoon. Public Building. " | The Spicer & Willoughby Co. | " 20, 1909 | 460 00 |
| " Post Office. Interior fittings | The Oshawa Interior Fitting Co. | April 16, 1909 | 102 60 |
| " Dom. Lands Office. Metal cabinets | Office Specialty Mfg. Co., Ltd. | July 30, 1909 | 840 00 |
| " Post Office. Wiring | McCallum & Co. | Feb. 10, 1910 | 279 00 |
| Yorkton. " Supply of coal | Harstone Bros. | Aug. 17, 1909 | 351 00 |
| " Immig. Building. " | D. E. Adams Coal Co., Ltd. | " 17, 1909 | |
| " Dom. Lands Office. Steel cabinets | Office Specialty Mfg. Co. | March 23, 1910 | 1,903 30 |
| " Post Office. Interior fittings | E. P. McGrath & Co. | " 23, 1910 | 1,063 00 |
| Yorkton. Public Building. Wiring and fittings | McCallum & Company | Aug. 5, 1909 | 994 50 |
| " " Heating apparatus | Cotter Bros., Ltd. | " 3, 1909 | 2,285 00 |
| <i>Alberta.</i> | | | |
| Calgary. Immigration Shed. Supply of coal | Chs. S. Lott | Aug. 24, 1909 | 135 94 |
| " Post Office. " | Chs. S. Lott | " 24, 1909 | 1,838 24 |
| Edmonton. Dom. Lands Office. " | The Clover Bar Coal Co. | " 16, 1909 | 203 86 |
| " Immigration Bldg. " | The Clover Bar Coal Co. | " 16, 1909 | 276 12 |
| " Public Building. " | The Clover Bar Coal Co. | " 16, 1909 | 1,010 95 |
| " " Fire escapes | Ross Bros., Ltd. | June 10, 1909 | 525 00 |
| " " Tower clock | A. Bruce Pawley | " 1, 1909 | 770 00 |
| " Post office. Interior fittings | The Berlin Interior Hardware Co., Ltd. | Aug. 30, 1909 | 7,520 00 |
| " " Electric fixtures | McCallum & Company | Sept. 21, 1909 | 2,750 00 |
| " " Freight hoist | Otis Fenson Elevator Co. | Mch. 26, 1910 | 2,921 00 |
| Lethbridge. Dom. Lands. Addit. and alterations | The J. McDiarmid Co. Ltd. | Jan. 28, 1910 | 7,777 50 |
| " Immigration Bldg. Supply of coal | Chs. S. Lott | Aug. 24, 1909 | 165 00 |
| MacLeod. Custom House. " | MacLeod Lumber Yard | " 28, 1909 | 52 72 |
| " " " | " " | " 28, 1909 | 66 46 |
| Medicine Hat. Immigrat. Hall. " | R. H. Hilliard | " 28, 1909 | 38 75 |
| Strathcona. " " | R. C. Cooper | " 19, 1909 | 201 27 |
| " " " | John Walter | Sept. 9, 1909 | |

SESSIONAL PAPER No. 19

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—*Continued.*

| Works. | | Names of Contractors. | | Date of Contract. | Amount. |
|--|---------------------------|--|----------------|-------------------|---------|
| PUBLIC BUILDINGS— <i>Concluded.</i> | | | | | \$ cts. |
| <i>British Columbia.</i> | | | | | |
| Cumberland, Public Building. | Elect. fixtures | Hawkins & Hayward | Sept. 4, 1909 | 498 00 | |
| " Post Office. | Fittings | The Berlin Interior Hardwood Co., Ltd. | " 16, 1909 | 1,850 00 | |
| Fernie, Post Office. | " | The Berlin Interior Hardwood Co., Ltd. | Oct. 5, 1909 | 3,150 00 | |
| Ladysmith, Public Building. | Heating apparatus | John & John D. Colbert | April 5, 1909 | 1,148 00 | |
| " " | Interior fittings | J. T. Schell | July 3, 1909 | 1,377 00 | |
| Vancouver, Post Office. | " | The Berlin Interior Hardwood Co., Ltd. | Aug. 30, 1909 | 12,350 00 | |
| " Custom House. | " | The Berlin Interior Hardwood Co., Ltd. | Feb. 1, 1910 | 4,150 00 | |
| Victoria, Detention Hospital. | Elect. fixtures | Hinton Electric Co., Ltd. | Nov. 4, 1909 | 1,100 00 | |
| HARBOURS AND RIVERS. | | | | | |
| <i>Nova Scotia.</i> | | | | | |
| Annapolis Royal. | Ice pier—Construction of. | The Nova Scotia Construction Company, Limited. | May 18, 1909 | 46,736 00 | |
| *Cheticamp, Dredging. | | The Dom. Dredging Company, Limited | " 29, 1909 | Sch. of prices | |
| *Digby | " | Maritime Dredging and Construction Company | " 29, 1909 | " " | |
| *Foucheu | " | Cape Breton Dredging Co., Limited | " 29, 1909 | " " | |
| *La Have River | " | The W. J. Poupore Company, Limited | " 29, 1909 | " " | |
| Petit de Grat | " | Beazley Bros., Limited | June 30, 1909 | " " | |
| *Red Islands | " | The W. J. Poupore Company, Limited | May 29, 1909 | " " | |
| *Yarmouth | " | The Dom. Dredging Company, Limited | " 29, 1909 | " " | |
| <i>Prince Edward Island.</i> | | | | | |
| Tignish, Harbour Works. | | J. H. and E. M. Myrick | June 4, 1909 | 23,952 00 | |
| <i>New Brunswick.</i> | | | | | |
| Bathurst, Dredging. | | A. and R. Loggie | May 29, 1909 | Sch. of prices | |
| Campbellton | " | A. and R. Loggie | Oct. 18, 1909 | 59 p.c. yard | |
| Cape Bald, Breakwater—Construction of. | | E. A. Wallberg | April 20, 1909 | 32,890 00 | |
| *Caraquet, Dredging. | | A. and R. Loggie | May 29, 1909 | Sch. of prices | |
| Cummings Cove, Wharf—Construction of. | | Thos. P. Charleson | Jan. 21, 1910 | 16,890 00 | |
| Leonardville, Deer Island, Wharf—Construct. of. | | Thos. P. Charleson | Sept. 13, 1909 | 9,895 00 | |
| Lorneville, Extra works to Breakwater. | | James E. Kane | Aug. 6, 1909 | 1,155 00 | |
| *Miramichi Riv. (near Barnaby's Island) Dredging | | Peter England | May 29, 1909 | Sch. of prices | |
| *Miramichi Bay, Dredging. | | The W. J. Poupore Company, Limited | " 29, 1909 | " " | |
| Moncton, Public Wharf—Extension to. | | Oscar and Warren Downey | Nov. 11, 1909 | 17,600 00 | |
| *Oromocto Shoals, Dredging. | | Maritime Dredging and Construction Co. | May 29, 1909 | Sch. of prices | |
| Pink Rock, Wharf Extension and Breakwater. | | Thos. P. Charleson | July 22, 1909 | 10,440 00 | |
| Quaco, Extension to Breakwater. | | John Burns & T. P. Charleson | April 22, 1909 | 7,479 36 | |
| St. John, Beacon Bar, Dredging. | | Maritime Dredging and Construction Company | May 10, 1909 | Sch. of prices | |

*Contracts awarded in 1908 renewed by virtue of an Order in Council, dated the 29th day of May, 1909.

1 GEORGE V., A. 1911

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—*Continued.*

| Works. | Names of Contractors. | Date of Contract. | Amount. |
|--|--|-------------------|---------------------|
| HARBOURS AND RIVERS—Continued. | | | \$ cts. |
| <i>Quebec.</i> | | | |
| *Batiscan River. Dredging..... | Dufresne, Turcotte & Marchildon | May 29, 1909 | Schedule of prices. |
| Chapeau, Concrete piers. Construction of..... | V. L. & J. J. Fallon..... | March 24, 1910 | 14,875 00 |
| *Chicoutimi, (Saguenay River). Dredging..... | The General Construction Company..... | May 29, 1909 | Schedule of prices. |
| Chicoutimi. Sewer pipe in front of wharf..... | Thaddée Desbiens..... | July 29, 1909 | 375 00 |
| *Fraserville. Dredging..... | The W. J. Poupore Company, Ltd | May 29, 1909 | Schedule of prices. |
| Kippewa River. Dam and sluiceways. Construction of..... | Morrow & Beatty..... | Nov. 20, 1909 | 26,210 00 |
| Lévis, Dry dock. Supply of coal..... | Robitaille & Company..... | Aug. 14, 1909 | Schedule of prices. |
| *Louiseville, (River du Loup en haut). Dredging..... | The W. J. Poupore Company, Ltd | May 29, 1909 | " |
| Long Sault Rapids, Concrete dam, &c. Construction of..... | T. Kirby & R. G. Stewart..... | July 22, 1909 | 108,050 00 |
| Matapedia. Proposed highway approach..... | D. W. B. Reid..... | Sept. 4, 1909 | 14,768 30 |
| *Rigaud. Dredging..... | L. Cohen & Son..... | May 29, 1909 | Schedule of prices. |
| *St. Francis River. Dredging..... | The W. J. Poupore Company, Ltd | " 29, 1909 | " |
| St. Liguori, Ice breaker. Construction of..... | Eugène Patenaude..... | Nov. 4, 1909 | 1,185 00 |
| *St. Maurice (mouth). Dredging..... | Antoine St. Pierre..... | May 29, 1909 | Schedule of prices. |
| *St. Pierre Les Becquets. Dredging..... | The Canada Improvement Company | " 29, 1909 | " |
| St. Placide | L. Cohen & Son..... | Sept. 11, 1909 | " |
| *Yamachiche | The W. J. Poupore Company, Ltd | May 29, 1909 | " |
| *Yamaska | " " " | " 29, 1909 | " |
| <i>Ontario.</i> | | | |
| Cobourg. Dredging | W. E. Phin..... | Aug. 4, 1909 | Schedule of prices. |
| *Fesserton | Penetanguishene Dredging Company..... | May 29, 1909 | " |
| Fort William, Harbour improvements. Supply of timber | Mason, Gordon & Company | " 11, 1909 | 119,782 30 |
| Fort William, Wharfs. Construction of..... | H. Smith & J. J. Heney..... | Sept. 7, 1909 | 222,675 35 |
| *Goderich. Dredging..... | W. L. Horton..... | May 29, 1909 | Schedule of prices. |
| *Kincardine | " " | " 29, 1909 | " |
| Latchford. Dam and sluiceways across Montreal River..... | Sinclair & Campbell..... | Jan. 28, 1910 | 38,705 00 |
| Mission & Kaninistiquia Rivers. Dredging..... | Great Lakes Dredging Company, Ltd..... | June 4, 1909 | Schedule of prices. |
| Pelée Island. Dredging..... | The Chatham Dredging Company | " 29, 1909 | 10c. p. c. y. |
| *Point Edward | Manley & Company..... | May 29, 1909 | Schedule of prices. |
| Port Arthur, Fish dock. Dredging..... | W. E. Phin | June 28, 1909 | " |
| *Port Arthur. Dredging..... | Great Lakes Dredging Company, Ltd..... | May 29, 1909 | " |
| *Port Burwell | Canada Construction and Dredging Company | " 29, 1909 | " |
| *Port Hope | W. E. Phin..... | " 29, 1909 | " |
| *Rondeau | Canada Construction and Dredging Company..... | " 29, 1909 | " |
| *Telegraph Island | R. Weddell & Company..... | " 29, 1909 | " |

* Contracts awarded in 1908, renewed by virtue of an Order in Council, dated the 29th day of May, 1909.

SESSIONAL PAPER No. 19

No. 1.—CONTRACTS let by the Department of Public Works of Canada, &c.—*Continued.*

| Works. | Name of Contractors. | Date of Contract. | Amount. |
|---|--|-------------------|----------------------------|
| HARBOURS AND RIVERS— <i>Concluded.</i> | | | \$ cts. |
| Ontario—Continued. | | | |
| *Tiffin Dredging..... | Canadian Dredge and Construction Co., Ltd..... | May 25, 1909 | " |
| *Victoria Harbour "..... | " " "..... | " 29, 1909 | " |
| Wallaceburg "..... | Manley Dredging Company | July 6, 1909 | P. c. y. 0.23c. |
| *Waubushene "..... | Penetanguishene Dredging Company | May 29, 1909 | Schedule of prices. |
| *Wingfield "..... | The C. S. Boone Dredging & Construction Company. | " 29, 1909 | " |
| Manitoba. | | | |
| St. Andrews Rapids. Self operating sluice valves. | The Victoria Foundry Company..... | Nov. 2, 1909 | 5,857 00 |
| St. Andrews Rapids. Lock gate operating machinery..... | " " "..... | " 2, 1909 | 3,985 00 |
| Vessels Dredges and Plant. | | | |
| Construction of two steel hopper scows..... | Toronto Shipyard..... | April 6, 1909 | 26,100 00 |
| Supply of oils and greases for dredging plant..... | McColl Bros., Ltd..... | " 8, 1909 | 1,138 17 |
| Supply of manilla rope for dredge..... | Lewis Bros., Ltd..... | " 7, 1909 | 5,375 27 |
| Tug service for dredges 'Montague' and 'Prince Edward' for 1909..... | The Island Tug Company, Ltd..... | June 30, 1909 | 25 00 |
| Supply of timber for dredges..... | Cameron & Company, Ltd. | Nov. 22, 1909 | per day each 19,370 00 |
| Construction of steam tug for dredge No. 3..... | The W. H. Kelly Company. | Jan. 10, 1910 | 7,500 00 |
| Construction of twin screw tug..... | Polson Iron Works, Ltd. | " 11, 1910 | 8,475 00 |
| Construction of a Fitzgibbon boiler for dredge 'Mattawa'..... | P. J. Powers & Co., Ltd.. | Dec. 11, 1909 | 1,300 00 |
| Construction of 2 dumping scows for dredge 'Deschambes'..... | James Baillie..... | Feb. 2, 1910 | 4,550 00 |
| Construction of one (1) compound inverted surface condensing engine for 'Storm King'..... | F. X. Drolet..... | Jan. 29, 1910 | 6,500 00 |
| Supply of wood for dredge 'Lac St. Jean'..... | F. X. Larache..... | Feb. 9, 1910 | 1,292 50 |
| Supply of wood for dredge No. 2..... | The W. H. Kelly Lumber Company..... | " 28, 1910 | 725 00 |
| Supply of oil and grease for Government tugs and dredges in Ontario and Quebec..... | National Oil Company of Canada..... | March 23, 1910 | Schedule of rates. |
| Supply of wood for dredge No. 2..... | The W. H. Kelly Lumber Company..... | May 17, 1909 | 516 25 |
| Supply of coal for Government tugs and dredges in Quebec..... | The Canadian Import Company..... | " 14, 1909 | 20,885 00 |
| Supply of wood for dredge 'Queen'..... | W. G. Armstrong..... | " 4, 1909 | 200 cords at \$2.50 p. cd. |

1 GEORGE V., A. 1911

No. 2.—STATEMENT of properties purchased or sold by the Department of Public Works of Canada, from April 1, 1909, to March 31, 1910.

| Date of Conveyance. | Vendors. | Purchasers. | Description of Property. | For what Purpose. | Area. | Price. |
|---------------------|---|-----------------|---|-----------------------|------------------|-----------|
| | | | | | | cts. |
| 1909. | | | | | | |
| April | 1 Dominion Life Assurance Company. | His Majesty | Lot No. 5, Waterloo, Ont. | Site Pub. Building. | 32 perches | 5,000 00 |
| " | 2 John McDonald | " | Lot No. 20, Tillsonburg, Ont. | " | 60 x 100 ft. | 5,500 00 |
| " | 3 Housser Armstrong | " | Lot No. 472, Portage La Prairie—Man. | Armoury. | 1 acre. | 6,500 00 |
| " | 6 John Convey et ux. | " | Lot No. 13, Mount Forest, Ont. | Public Building. | | 3,000 00 |
| " | 7 Minnie Rankin et ux. | " | Lot No. 13, Seatonrd, Ont. | " | 60 x 132 ft. | 2,700 00 |
| " | 7 David McAllister et ux. | " | Land at McAllister, N.B. | Right of way to wharf | | 1 50 |
| " | 8 Wm. T. Box et ux. | " | Lot No. 16, Seatonrd, Ont. | Site Pub. Building. | | 1,300 00 |
| " | 10 Town of Grand Falls, N.B. | " | Parts of lots 15, 16—Block 8, Grand Falls, N.B. | " | | 900 00 |
| " | 10 Matthew Haslie et ux. | " | Lot No. 22, Harristown, Ont. | " | | 450 00 |
| " | 13 Geo. E. Hodson. | " | Lot 5 and 7, Block 12—Lloydminster, B.C. | Armoury Site. | | 1,500 00 |
| " | 13 R. McDonald et ux. | " | Land at Marble Mountain, N.S. | " | 23, 340 sup. ft. | 400 00 |
| " | 14 Wm. Mitchell & Alf. Curry | " | Portion of lots 29 and 30, Block "C" Souris, Man. | Site Pub. Building. | | 5,000 00 |
| " | 15 D. MacLachlan et ux. and K. Sanders. | " | Lands—Marble Mountain, N.S. | Wharf. | 3,660 ft. | 1 00 |
| " | 16 Polson Iron Works Ltd. | " | Bill of Sale dredges "Sir Wilfrid" | Gov't. purposes. | | 90,000 00 |
| " | 17 J. W. McKenzie. | " | Land—Marble Mountain, N.S. | Wharf. | 270 sup. ft. | 1 00 |
| " | 19 K. De LaRue. | " | Lots 29, 30 and 31, block 60, Lethbridge, Alta. | Armoury. | 75 x 125 ft. | 1,500 00 |
| " | 23 Michaud & Levesque | " | Part of lot 5, Sturgeon Falls, Ont. | Site Pub. Building. | | 2,000 00 |
| " | 26 Highland Society of New Brunswick. | " | Part of lot 35, Chatham, N.B. | Armoury. | 1 acre. | 6,000 00 |
| " | 27 His Majesty. | Mrs. H. A. Gray | Sale of Cottage, Warda Island, Toronto, Ont. | Private enterprise. | | 500 00 |
| " | 28 Joseph Richard. | His Majesty | Land—Richibucto Cape, N.B. | Breakwater. | 1 acre. | 50 00 |
| " | 28 Wilfrid Desjardins. | " | Cadastral lots 144 and 228, Ste. Therese, Que. | Site Pub. Building. | | 5,000 00 |
| " | 29 Les G. E. Goulet. | " | Lot No. 68, St. Hilaire, P.Q. | " | 5,476 sq. ft. | 1,200 00 |
| " | 29 J. E. Robillard. | " | Sale of Barge "Beaufort" | Gov't. purposes. | | 2,100 00 |
| " | 29 Trustees United Baptist Church of Can-ning, N.S. | " | Land at Canning, N.S. | Armoury Site. | | 3,000 00 |
| " | 30 C. J. Mickle et ux. | " | Land at Chesley, Ont., lot No. 28. | Pub. Building, Site. | | 3,800 00 |
| May | 1 J. Wilson et ux. | " | Lot No. 1, Listowell, Ont. | " | 9 sq. perches. | 2,525 00 |

SESSIONAL PAPER No. 19

| | | | | | |
|--------|---|---|------------------------|------------------|-----------|
| 1 | Clara Morrison | Lot No. 8, Listowell, Ont. | Wharf | 84 sqr. porches. | 650 00 |
| " | J. W. Scott <i>et al.</i> | Lot No. 2, Listowell, Ont. | " | 8 porches. | 700 00 |
| " | Augusto Estabro | Cadistral lot No. 222, Cap. St. Ignace, Q. | " | 15,025 sqr. ft. | 100 00 |
| " | 4 Mitchell Richards | Land, etc., Fairville, N.B. | Pub. Building, Site. | 5,725 sqr. ft. | 2,000 00 |
| " | 6 Trustees of E. J. Smith | Land at Shediac, N.B. | Wharf | 2 1/2 acres | 200 00 |
| " | 7 Chas. Norcan <i>et al.</i> | Strip of land, St. Roch de Quebec. | Public Building. | Expropriation. | |
| " | 8 Mary Ann McCor. | Lot No. 118, Sudbury, Ont. | " | | 12,000 00 |
| " | 8 Harrison Shoe Com. | Lot No. 22, Harrison, Ont. | " | | 2,550 00 |
| " | many, Ltd. <i>et al.</i> | Lots 1 and 2, block 63, Strathcona, Alta. | Public Building. | 10,500 00 | 2,500 00 |
| " | 10 Dr. S. Archibald. | Lots 1 and 2, block 97, Strathcona, Alta. | Armoury | 3,000 00 | 3,000 00 |
| " | 10 Angus McLeod. | Land—Shelburne, N.S. | Pub. Building (Site). | 544 11 | 17,500 00 |
| " | 10 Adolphus Gillies <i>et al.</i> | Property on Sussex St., Ottawa, Ont. | " | | 13,000 00 |
| " | 17 H. Cordon <i>et al.</i> | Lot No. 354, St. Mary's Ward, Montreal, Quebec. | " | | 20,000 00 |
| " | 17 Napoleon Jeanmotte. | Property, Sussex St., Ottawa, Ont. | " | | 20,000 00 |
| " | 19 Murphy <i>et al.</i> | Property, Sussex St., Ottawa, Ont. | " | | 20,000 00 |
| " | 21 Margaret Haynes <i>et al.</i> | Land at Durham, Ont. | Armoury Site. | 5,000 sq. ft. | 100 00 |
| " | 28 Jos. Adam Brown <i>et al.</i> | S. 60 ft. of lots 19, 20, 21, 22 block 11, Leithbridge, Alta. | Innng, Bld'g. | | 2,200 00 |
| " | 31 Certificate of Title, in favour of | Easterly part of lot 132, Arthabaska, Que. | Site Pub. Bld'g. | | 2,500 00 |
| June | 4 Henri Pepin | Part of lot 31, Senneville, N.B. | Right of way to wharf | 1 1/2 acre. | 1 00 |
| " | 9 Geo. S. Benton. | Bill of Sale of Dredge & Scurra. | Gov't purposes. | 1 1/2 acre. | 6,500 00 |
| " | 19 Geo. C. Hurdman. | Land at Drummond, N.B. | Wharf | 1 acre. | 200 00 |
| " | 22 John E. Secker <i>et al.</i> | Land—Harvey Bank, N.S. | " | 1 1/2 acre. | 400 00 |
| " | 25 Chs. F. Dow <i>et al.</i> | Land—Part of lot No. 62, at Mitchell, Ont. | Pub. Building, Site. | 75 x 105 ft. | 1,000 00 |
| " | 25 Corporation of Mitchell, Ont. | Land at Matapedia, P.Q. | Right of way to bridge | 1 1/2 acre. | 1 00 |
| " | 26 Restigouche Sulmon Club. | Lot No. 29, block 3, Wetaukwin, Alta. | Site Pub. Building. | | 9,000 00 |
| July | 2 Horrie West <i>et al.</i> | Lot No. 5 and part of lot Letter "Q" Sarina, Ont. | " | | 5,500 00 |
| " | 9 D. A. Breuer. | Land at White Head, Grand Manan, N.B. | Appt. to wharf. | 1 1/2 of acre. | 1 00 |
| " | 13 Shadrach Bancroft <i>et al.</i> | Strip of land at Castle Bay, N.S. | Right of way to wharf | 30 x 2750 ft. | 1 00 |
| " | 18 James A. MacDonald <i>et al.</i> | Land and wharf at Cantreecur, Que. | Gov't. purposes. | | 2,000 00 |
| " | 21 Richelieu & Ont. Navigation Co. Ltd. | Land at Fort William, Ont. | National Harbour. | 13 1/2 acres. | 1 00 |
| " | 22 Grand Trunk Pacific Ry. Company. | Land—French Village, N.S. | Wharf | 975 sqr. ft. | 100 00 |
| " | 31 Alf. T. Worger. | Lots 139 and 142, Roberval, P.Q. | " | | 4,000 00 |
| August | 12 Alf. J. Brassard. | Land at the Range, Waterboro, N.B. | " | 388 sqr. ft. | 75 00 |
| " | 19 Amy I. Wammaker <i>et al.</i> | Land at Campbell, N.B. | " | 2 1/2 acre. | 1 00 |
| " | 21 The Campbell Corporation Ltd. | Land at Castle Bay, N.S. | Right of way. | 30 x 2750 ft. | 1 00 |
| " | 23 Mary McDonald. | Land at Sheet Harbour, N.S. | Wharf | 5,344 sqr. ft. | 65 00 |
| " | 25 Robert Dion. | | | | |

1 GEORGE V., A. 1911

No. 2.—STATEMENT of properties purchased or sold by the Department of Public Works of Canada, &c.—Continued.

| Date of Conveyance. | Vendors. | Purchasers. | Description of property. | For what Purpose. | Area. | Price. |
|---------------------|---|-----------------------------|---|---------------------|---------------------------------|-----------------|
| 1909. | | | | | | cts. |
| Sept. | 3 Susan McLaren. | His Majesty. | Lot No. 6, Concession F, Island No. 1, Fort William, Ont. | Harb. improvements. | 1 $\frac{1}{2}$ acre. | 490 00 |
| " | 3 P. & D. McKellar. | " | Lot No. 6, Con. F, Island No. 1, Fort William, Ont. | " | 1 $\frac{1}{2}$ acre. | 490 00 |
| Sept. | 17 Sarah Dunn <i>et al.</i> | " | Land—Monk's Head, N.S. | For Canal. | 8,364 sq. ft. | 150 00 |
| Oct. | 2 M. J. Nelson <i>et ux</i> | " | Land—Yonges Cove, N.B. | Wharf. | 250 ft. & $\frac{1}{2}$ sq. yd. | 50 00 |
| " | 12 C. A. Neve <i>et ux</i> | " | Land—Lower Jemseg, N.B. | Appt. to wharf. | 2,844 sq. ft. | 1 00 |
| " | 13 His Majesty. | Ottawa Terminals Ry. Co'y. | Portion of Major's Hill Park, Ottawa, Ont. | Hotel site. | 26,468 sq. ft. | 100,000 00 |
| " | 21 " " | His Majesty. | Land—Litchford, Ont. | For dam. | 1 $\frac{1}{2}$ acre. | Exp'n. of land. |
| " | 28 J. R. Booth. | " | Land—Kippewa, Ont. | " | 1 $\frac{1}{2}$ acre. | " |
| " | 28 Temisea Mining & North'n. Ont. Ry. Co. | " | (Lots 121, 130, 139, 147, 155, 163, 170, 177, 198 and 208,) at Litchford, Ont. | " | 43 $\frac{7}{8}$ acres. | 800 00 |
| Nov. | 5 Allen Mosher <i>et al.</i> | " | Lands—Township of Poitras, Nipissing, Ont. | For wharf. | 1 $\frac{3}{8}$ acre. | Exp'n. of land. |
| " | 10 His Majesty. | Suittary Laundry Co'y. Ltd. | Land—Cummings' Cove, N.B. | Private enterprise. | | 100 00 |
| " | 12 John D. McDonald <i>et al.</i> | His Majesty. | Lot No. 8, block "C" Prince Albert, Sask. | Appr. to wharf. | 10,824 sq. ft. | 1,100 00 |
| " | 30 J. B. Landry & J. W. Dumas. | " | Land—Seaside, N.S. | " | | 75 00 |
| Dec. | 10 Wm. Paul. | " | Lands—Grande Anse, N.B. | Gov't. purposes. | | 40 00 |
| " | 31 Richard W. Rao <i>et al.</i> | " | Bill of Sale Yacht "Fast" | Appt. to wharf. | 1 $\frac{1}{2}$ acre. | 3,000 00 |
| 1910. | | | | | | |
| March | 7 John C. Kane. | " | Bill of Sale Tug "J. B. Whitherbee" | Gov't. purposes. | | 12,000 00 |
| " | 17 Jas. Brown. | " | Lands—Craven Dam, Sask. | Wharf. | | 47,290 33 |
| " | 29 W. E. Palmer <i>et al.</i> | " | Land—Owl's Head, N.S. | " | 7,425 sq. ft. | 50 00 |

J. A. CHASSE,
*Law Clerk.*DEPARTMENT OF PUBLIC WORKS,
OTTAWA, July 29, 1910.

SESSIONAL PAPER No. 19

No. 3.—STATEMENT of Properties leased to and by the Department of Public Works from April 1, 1909, to March 31, 1910.

| Date of Lease. | Lessor. | Lessee. | Description of Property. | For what purpose. | Duration of Lease. | Rental. |
|----------------|-----------------------------------|-----------------------------------|---|------------------------------------|---------------------|------------------------------|
| 1909 | | | | | | \$ |
| April | 2 Joseph Nice. | His Majesty | Building at Stettler, Alta. | Innig. purposes. | Monthly tenancy | 25 00 p. m. |
| " | 5 Thomas Fleming. | " | Building—Sparks St., Ottawa, Ont. | Military purposes. | 5 years. | 900 00 p. a. |
| " | 10 J. C. Brennan. | " | Rooms "Trafalgar Building," Ottawa, Ont. | Annuites Branch. | 5 years. | 950 00 p. a. |
| " | 13 Edith Taylor. | " | Premises in Carry Building, Ottawa, Ont. | Gov't purposes. | 5 years. | 10,200 00 p. a. |
| " | 16 City of Moosejaw. | " | Lots Nos. 27 and 28, Block 125, Moosejaw. | Innig. purposes. | 5 years. | 100 00 p. a. |
| " | 22 Town of Battleford. | " | Lots 41-42, Battleford, Sask. | Innig. purposes. | 10 years. | Tax to be paid for rental... |
| " | 23 His Majesty. | Canadian Shoe Machinery Co., Ltd. | "Carrier & Laine Property," Lévis, Que. | Private enterprise. | 30 years. | 160,000 for whole period... |
| " | 27 Fred. Weise & Son. | His Majesty | Building at Irvine, Alta. | Innig. purposes. | 1 year. | 180 00 p. a. |
| " | 28 Joseph Lauzon. | " | Land—Notre Dame de la Salette, Que. | Right of way. | 1 year. | 50 00 p. a. |
| May | 29 John Burn. | " | Building at Sedgewick, Alta. | Innig. purposes. | 7 months. | 210 00 for whole period. |
| " | 1 Royal Trust Co. | " | Premises on Wellington street, Ottawa, Ont. | International Boundary Commission. | 2 years. | 1,100 00 p. a. |
| June | 19 His Majesty. | John Reid | Lot No. 1, Block 13, New Westminster, B.C. | Private enterprise. | 15 months. | 125 00 for whole period. |
| " | 22 Estate S. Delorme. | His Majesty | Premises—St. Paul street, Montreal, Que. | Militia and Defence. | 5 years. | 2,000 00 p. a. |
| July | 23 Bank of Hochelaga. | " | Rooms—Hochelaga Bk Building, Quebec | Agriculture. | 2 yrs. 11 mos. | 350 00 p. a. |
| " | 5 Municipality of Trois Pistoles. | " | Premises at Trois Pistoles, Que. | Post Office. | 1 year—renewable. | 100 00 p. a. |
| " | 7 Imperial Realty Co., Ltd. | " | Premises—Queen street, Ottawa, Ont. | Railway Commission. | 5 years. | 5,300 00 p. a. |
| " | 20 His Majesty. | Alex. Winter. | Premises at Seaforth, Ont. | Private enterprise. | during pleasure. | 135 00 for whole period. |
| " | 29 " | M. T. Box. | Premises at Seaforth, Ont. | " | " | 65 00 for whole period. |
| " | 29 J. T. Polly. | His Majesty | "Clarified Milk Property, Kingston, Ont. | Military purposes. | 5 years. | 1,000 00 p. a. |
| " | 30 Ovide Carrier. | " | Premises at Black Lake, Que. | Post Office. | 1 year—renewable. | 150 00 p. a. |
| " | 30 His Majesty. | J. R. Booth. | Land—93,870 square feet, Ottawa, Ont. | Private enterprise. | 21 years—renewable. | 208 00 p. a. |
| Sept. | 30 " | J. C. Robitaille. | Land—part of lot 43, 6,163 sup'l ft., Lévis, Que. | " | " | 1 00 p. a. |
| 1 | " | John Corley. | Premises—Mount Forest, Ont. | " | " | 180 00 for whole period. |
| " | 21 Thistle Estate. | His Majesty | Rooms in Thistle Building, Ottawa, Ont. | Mines Branch Dept. | 25 months. | 1,100 00 p. a. |

SESSIONAL PAPER No. 19

| | | | | | | |
|-------|---|------------------------|---|-------------------------|------------------|--------------|
| " | 23 Great North Western Telegraph Co. | His Majesty | Room in Great North Western Telegraph Co's, Building.. | Conservation Com'n. | " | 360 00 p. a. |
| " | 24 His Majesty | Albert Paquet to | Land-Pond Creek, Ottawa River, Hull, Que..... | Private enterprise..... | " | 1 00 p. a. |
| " | 24 J. C. Brennan | His Majesty | Rooms (2) Trafalgar Building, Ottawa, Ont..... | Annuitia Branch | Yearly tenancy.. | 500 00 p. a. |
| " | 30 Grand Trunk Pacific Development Co., Ltd. | " | Lots 27, 28 and 29, Block 6, Unity, Sask..... | Site—Immigr. Hall..... | 21 years..... | 1 00 p. a. |
| March | 31 His Majesty .. | A. Patterson..... | Premises 482 Sussex street, Ottawa, Ont. | Private enterprise..... | monthly tenancy | 20 00 p. m. |
| " | 31 | D. Choquette..... | Premises 504 Sussex street, Ottawa, Ont. | " | " | 15 00 p. m. |

J. A. CHASSÉ,
Law Clerk.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, JULY 29th, 1910.

LIST
OF SOME OF THE
ACTS OF PARLIAMENT
PASSED AT THE SESSION OF 1909-10
HAVING REFERENCE TO THE
DEPARTMENT OF PUBLIC WORKS, OR WORKS UNDER ITS CHARGE.

LIST of some of the Public Acts of the Parliament of Canada, passed at the Second Session of the Eleventh Parliament, begun and holden at Ottawa, on the Eleventh day of November, 1909, and closed by Prorogation on the Fourth day of May, 1910, and having reference to the Public Works Department or works under its charge (9-10 Edward VII.)—

| Subject. | Full Title of the Statute. | Chapter | Page in Statute Book. |
|--|--|---------|-----------------------|
| Sums granted to His Majesty for the financial years ending respectively March 31, 1910, and March 31, 1911, and the purposes for which they are granted. | An Act for granting to His Majesty certain sums of money for the public service of the financial years ending respectively March 31, 1910, and March 31, 1911. | 1 | 3 |
| | An Act for granting to His Majesty certain sums of money for the public service of the financial year ending March, 1910. | 2 | 57 |
| | An Act for granting to His Majesty certain sums of money for the public service of the financial year ending March 31, 1911. | 3 | 63 |
| Government Subsidies | An Act to encourage the construction of dry docks. | 17 | 169 |
| Construction of bridges, booms, wharfs, &c. | An Act to amend the Navigable Waters Protection Act. | 44 | 389 |
| Annual grant increase | An Act respecting the City of Ottawa. . . . | 45 | 391 |

N.B.—By proclamation dated May 28, 1909, regulations were made for the operation of the booms and works on the North Thompson river, B. C., during the season of 1909, subject, however, to amendments. (*Vide Canada Gazette*, Vol. xlii., p. 3445).

By proclamation dated March 7, 1910, the tariff of tolls proposed to be levied by the Upper Ottawa Improvement Company, Limited, of Ottawa, Ont., for the use of their works during the season of 1910, were approved. (*Vide Canada Gazette*, Vol. xliii., p. 2767.)

By proclamation dated March 7, 1910, the tariff of tolls proposed to be levied by the French River Boom Company, Limited, for the use of their works during the season of 1910, were approved. (*Vide Canada Gazette*, Vol. xliii., p. 2768.)

J. A. CHASSE,
Law Clerk.

DEPARTMENT OF PUBLIC WORKS,
OTTAWA, July 29, 1910.

NATIONAL ART GALLERY

CURATOR'S REPORT

FOR THE FISCAL YEAR ENDED MARCH 31, 1910

NATIONAL ART GALLERY.

OTTAWA, July 20, 1910.

D. EWART, Esq., I.S.O.,
Chief Architect.

SIR,—I have the honour to report the following additions, by purchase, to the collection, during the fiscal year ended March 31, 1910, viz:—

OIL PAINTINGS.

| | |
|---|-------|
| Four Calves, by Franklin Brownell, R.C.A.. | \$175 |
| A Winter Scene, by A. Suzar Côté.. . . . | 300 |
| Portrait of the Rt. Hon. Sir Wilfrid Laurier, by A. Suzar Côté.. . . . | 500 |
| Old Mill, by J. S. Gordon.. . . . | 300 |

MISCELLANEOUS.

| | |
|--|-----|
| Wheelbarrow used by Lady Head in turning the first sod of the E. N. A. railway (I.C.R.) in 1853.. . . . | 200 |
|--|-----|

During the fiscal year the number of visitors who registered was 11,939.

I have the honour to be, sir,

Your obedient servant,

WALTER R. BILLINGS,
Acting Curator N.A.G.

NAMES OF THE CHIEF OFFICERS
OF THE
DEPARTMENT OF PUBLIC WORKS
WITH
DATES OF APPOINTMENT, ETC., FROM 1841 TO 1910.

NAMES OF THE CHIEF OFFICERS.

The names and dates of the appointment, &c., of the principal Officials of the Department of Public Works, from 1841 to 1910.

| Names. | Capacity or office. | Date of Appointment. | |
|---|--|----------------------|----------------|
| | | Served. | |
| | | From | To |
| <i>Under Statute 4-5 Vic., Chap. 38.</i> | | | |
| CORPORATION BOARD OF WORKS. | | | |
| Killaly, Hon. H. H. | Chairman..... | Dec. 29, 1841 | Oct. 3, 1844 |
| Daly, Hon. D. | Members..... | | |
| Harrison, S. R. | | | |
| Sullivan, R. B. | | | |
| Davidson, J., Esq. | | | |
| Begly, Thomas A. | Secretary..... | Aug. 17, 1841 | |
| Keefer, Samuel..... | Chief Engineer.. . . . | " 17, 1841 | |
| Rubidge, F. B. | Architect and Assistant Chief Engineer | Dec. 15, 1841 | |
| NEW BOARD OF WORKS. | | | |
| Killaly, Hon. H. H. | Chairman..... | Oct. 4, 1844 | June 8, 1846 |
| Daly, Hon. D. | Members.... | | |
| Draper, Hon. W. H. | | | |
| Morris, Hon. W. | | | |
| Papineau, Hon. D. B. | | | |
| | | | |
| <i>Under Statute 9th Vic., Cap. 37, &c.</i> | | | |
| Robinson, Hon. W. B. | Chief Commissioner..... | June 22, 1846 | Mch. 10, 1848 |
| Taché, Hon. E. P. | " | Mch. 11, 1848 | Nov. 26, 1849 |
| Chabot, Hon. J. | " | Dec. 13, 1849 | Mch. 31, 1850 |
| Merritt, Hon. W. H. | " | April 8, 1850 | Feb. 11, 1851 |
| Bourret, Hon. J. | " | Feb. 12, 1851 | Oct. 27, 1851 |
| Young, Hon. John..... | " | Oct. 28, 1851 | Sept. 22, 1852 |
| Chabot, Hon. J. | " | Sept. 23, 1852 | Jan. 26, 1855 |
| Lemieux, Hon. F. | " | Jan. 27, 1855 | Nov. 25, 1857 |
| Alleyn, Hon. C. | " | Nov. 26, 1857 | Aug. 1, 1858 |
| Holton, Hon. L. H. | " | Aug. 2, 1858 | " 6, 1858 |
| Siocotte, Hon. L. V. | " | " 7, 1858 | Jan. 10, 1859 |
| Rose, Hon. John..... | " | Jan. 11, 1859 | June 12, 1861 |
| Cauchon, Hon. Jos. | Commissioner | June 13, 1861 | May 23, 1862 |
| Tessier, Hon. U. J. | " | May 24, 1862 | " 27, 1863 |
| Drummond, Hon. L. T. | " | " 28, 1863 | July 23, 1863 |
| Laframboise, Hon. M. | " | July 24, 1863 | Mch. 29, 1864 |
| Chapais, J. C. | " | Mch. 30, 1864 | June 30, 1867 |
| Casgrain, Hon. Chas. Eus. | Second Commissioner. | July 9, 1846 | Feb. 29, 1848 |
| Cameron, Hon. M. | Assistant Commissioner. | Mch. 11, 1848 | " 1, 1850 |
| Wettenhall, James, Esq. | " | Feb. 2, 1850 | April 16, 1850 |
| Bourret, Hon. Jos. | " | April 17, 1850 | Feb. 11, 1851 |
| Killaly, Hon. H. H. | " | Feb. 12, 1851 | May 6, 1859 |
| Keefer, Samuel..... | Deputy Commissioner..... | May 6, 1859 | Mch. 7, 1864 |
| Trudeau, Toussaint | " | Mch. 8, 1864 | May 29, 1868 |
| Begly, Thos. A. | Secretary..... | Feb. 10, 1841 | Oct. 31, 1857 |
| Trudeau, Toussaint.. | " | Dec. 13, 1859 | Mch. 7, 1868 |
| Braun, Frederick | " | Mch. 8, 1864 | July 1, 1864 |
| Page, John..... | Chief Engineer... | Oct. 31, 1873 | Oct. 1, 1874 |

1 GEORGE V., A. 1911

The names and dates of the appointment, &c., of the principal Officials of the Department of Public Works, from 1841 to 1910—*Continued.*

| Names. | Capacity or office. | Date of Appointment. | |
|---|----------------------|----------------------|----------------|
| | | Served. | |
| | | From | To |
| <i>Under Statute 31 Vic., Cap. 12.</i> | | | |
| McDougall, Hon. Wm. | Minister. | July 1, 1867 | Dec. 7, 1869 |
| Langevin, C. B., Hon. Hector L. | " | Dec. 8, 1869 | Nov. 6, 1873 |
| Mackenzie, Hon. Alexander. | " | Nov. 7, 1873 | Oct. 16, 1878 |
| Tupper, C.B., K.C.M.G., Sir Charles | " | Oct. 17, 1878 | May 19, 1879 |
| Langevin, C.B., K.C.M.G., Sir Hector L. | " | May 20, 1879 | Aug. 11, 1891 |
| Smith, Hon. Frank. | Acting Minister. | Aug. 14, 1891 | Jan. 10, 1892 |
| Onimet, Hon. Joseph Aldéric. | Minister. | Jan. 11, 1892 | April 30, 1896 |
| Desjardins, Hon. Alphonse. | " | May 1, 1896 | July 12, 1896 |
| Tarte, Hon. J. Israel. | " | July 13, 1896 | Oct. 21, 1902 |
| Sutherland, Hon. James. | " | Nov. 11, 1902 | May 3, 1905 |
| Hyman, Hon. Charles S. | " | May 22, 1905 | Aug. 29, 1907 |
| Pugsley, Hon. Wm. | " | Aug. 30, 1907 | |
| Trudeau, Toussaint. | Deputy Minister | May 29, 1868 | Oct. 1, 1879 |
| Baillargé, G. F. | " | Oct. 4, 1879 | Dec. 31, 1890 |
| Gobeil, A., I.S.O. | " | Jan. 1, 1891 | June 2, 1908 |
| Hunter, James B. | " | July 1, 1908 | |
| Braun, Frederick. | Secretary | " 1, 1867 | Sept. 30, 1879 |
| Chapleau, S. | " | Oct. 1, 1879 | Nov. 4, 1880 |
| Ennis, F. H. | " | Nov. 5, 1880 | Jan. 13, 1885 |
| Gobeil, A. | " | Jan. 23, 1885 | Dec. 31, 1890 |
| Roy, E. F. E. | " | " 1, 1891 | " 31, 1900 |
| Gélinas, Fred. | " | June 8, 1901 | July 2, 1908 |
| Tessier, Napoléon. | " | Aug. 11, 1908 | June 2, 1910 |
| Desrochers, Rodolphe Charles. | " | July 1, 1910 | |
| McPherson, D. A. | Assistant Secretary. | Jan. 18, 1891 | April 11, 1893 |
| Desrochers, Rodolphe Charles. | " | " 8, 1896 | June 30, 1910 |
| Page, John | Chief Engineer. | July 1, 1868 | Oct. 1, 1879 |
| Perley, H. F. | " | Nov. 25, 1880 | July 10, 1891 |
| Coste, Louis. | " | July 26, 1892 | Mch. 18, 1899 |
| Lafleur, E. D. | " | Jan. 7, 1905 | |
| Scott, Thos. S. | Chief Architect. | May 26, 1871 | Oct. 30, 1881 |
| Fuller, Thomas. | " | Oct. 31, 1881 | June 30, 1897 |
| Ewart, David, I.S.O. | " | Nov. 2, 1897 | |

NAMES

OF THE

OFFICIALS EMPLOYED ON THE SLIDES AND BOOMS OF CANADA

ON MARCH 31, 1910

WITH

DATES OF APPOINTMENT, SALARIES, ETC.

1 GEORGE V., A. 1911

OFFICIALS EMPLOYED ON THE SLIDES AND BOOMS.

STATEMENT showing the Names, Dates of Appointment, Salaries, &c., of persons employed on the various Slides and Booms on March 31, 1910.

| Name. | Date of Birth. | Position. | Where employed. | Date of Appointment. | Salary. | Remarks. |
|---|----------------|--------------------------------------|----------------------|----------------------|--------------------|--|
| <i>Collector of Public Works Revenue.</i> | | | | | | |
| E. T. Smith | Nov. 26, 1846. | Collector—First Div. Subdivision "B" | Ottawa | July 1, 1889. | \$2,220 00 a year. | Date of first appointment to Crown Timber Office, Ottawa, June 23, 1864. Clerk in Dept. of Inland Revenue, July 1, 1870, to June 30, 1889. Transferred to civil list with rank of first class clerk, January 5, 1892. Chief clerk, July 1, 1906. |
| James Steen | June 17, 1830. | Boatman | " | " 12, 1889. | 60 00 a month. | Date of first appointment, May 26, 1861. Timber counter, Ottawa, for Dept. of Inland Revenue, January 7, 1884, to June 30, 1889. |
| J. Brassard | Jan. 9, 1853. | " | " | Mar. 1, 1901. | 70 00 " | |
| <i>Saguenay District.</i> | | | | | | |
| G. Bilodeau | Jan. 29, 1841. | Boom master | Chicoutimi | May 1, 1906 | 75 00 " | |
| William Dallaire | Oct. 8, 1837. | Asst. boom master | " | April 1, 1907. | 60 00 " | |
| Armand Ouellet | June 15, 1879. | Boom keeper | " | May 1, 1906. | 40 00 " | |
| Willie Dallaire | Dec. 23, 1852. | " | " | " 1, 1906. | 40 00 " | |
| N. Duchesne | Jan. 6, 1880. | " | " | April 6, 1898. | 40 00 " | |
| <i>St. Maurice District.</i> | | | | | | |
| L. P. Dallaire | June 11, 1865. | Paymaster | Three Rivers | May 1, 1898. | 1,060 00 a year. | |
| Jos. Pagé | July 7, 1845. | Boom master | Month of St. Maurice | Dec. 10, 1879. | 75 00 a month. | |
| John Dick | Apr. 15, 1848. | Asst. boom master | Three Rivers | May 21, 1898. | 75 00 " | |
| H. Bousa | Aug. 15, 1850. | " | Stes. Flore | Dec. 1, 1906. | 52 00 " | |
| Motie Masson | Dec. 29, 1845. | Boom master | Grandes Piles | Apr. 19, 1898. | 75 00 " | |
| N. Lynburner | July 22, 1855. | " | Shawenigan Falls | July 1, 1896. | 75 00 " | |
| Napoléon Lapointe | Mar. 15, 1872. | " | Shawenigan Bay | Nov. 12, 1906. | 75 00 " | |
| Pierre Duchaine | Oct. 8, 1856. | " | Grand-Mère | May 7, 1907. | 75 00 " | |

1 GEORGE V., A. 1911

LOCKS ETC., EMPLOYEES.
STATEMENT showing the Names, Dates of Appointment, Salaries, &c.—Continued.

| Name. | Date of Birth. | Position. | Where employed. | Date of Appointment. | Salary. | Remarks. |
|---|-----------------|------------------|------------------------|----------------------|---------------|------------------------|
| <i>Burlington Channel Swing Bridge.</i> —Continued. | | | | | \$ cts. | |
| T. Dwyer..... | May 22, 1883. | Bridge assistant | Burlington..... | April 1, 1909. | 49 50 a month | Employed nine months. |
| T. Harvey..... | May 22, 1883. | " | " | " 1, 1909. | 49 50 " | " |
| <i>Yanaska Lock.</i> | | | | | | |
| O. Mineau..... | July 4, 1844 | Lock keeper | Yanaska..... | Sept. 1, 1883. | 75 00 a month | " |
| H. Lambert..... | Aug. 20, 1844 | " | " | July 1, 1891. | 50 00 " | " |
| <i>Rivière du Lièvre Lock.</i> | | | | | | |
| Hugh R. Gorman..... | Sept. 20, 1842. | Lock master | Rivière du Lièvre..... | April 15, 1897. | 47 75 a month | Employed eight months. |
| Charles Bruzeau..... | Dec. 23, 1852. | Labourer | " | March 3, 1902. | 35 00 " | |
| <i>Rivière Saint-Louis, Feeder.</i> | | | | | | |
| Julien Monpetit..... | Mar. 4, 1866 | Gate keeper | Rivière St. Louis..... | May 11, 1903. | 10 00 a month | |

JOS. VINCENT.

NAMES

OF

PERSONS EMPLOYED ON THE VARIOUS GRAVING DOCKS

ON MARCH 31, 1910

WITH

DATES OF APPOINTMENT, SALARIES, ETC.

1 GEORGE V., A. 1911

GRAVING DOCK EMPLOYEES.

STATEMENT showing the names, Dates of Appointment, Salaries, &c., of persons employed on the various Graving Docks, March 31, 1910.

| Name. | Position. | Where Employed. | Date of Appointment. | Salary. | Remarks. |
|--|---------------------------|-----------------|----------------------|--------------------|----------|
| <i>Esquimaux Graving Dock, British Columbia.</i> | | | | | |
| J. A. Gould | Dockmaster | Esquimaux | June 20, 1905 | \$ 150 00 a month. | |
| John Jeffcott | Engineer | " | Jan. 4, 1901 | 120 00 " | |
| F. N. Jones | Assistant engineer | " | " 8, 1901 | 100 00 " | |
| A. D. Grieve | Carpenter | " | Dec. 1, 1878 | 115 00 " | |
| J. Young | Labourer | " | June 1, 1903 | 65 00 " | |
| J. Stock | " | " | July 1, 1894 | 65 00 " | |
| Chas. Jordan | Stoker | " | " 1, 1901 | 70 00 " | |
| Joseph Appleby | " | " | Jan. 1, 1907 | 70 00 " | |
| James Isbister | Watchman | " | July 24, 1909 | 60 00 " | |
| <i>Levis Graving Dock.</i> | | | | | |
| Alf. Sanson | Dockmaster | Levis | Feb. 15, 1900 | 1,750 00 a year | |
| W. McDougall | Mechanical engineer | " | June 1, 1888 | 50 00 a month | |
| T. Després | Asst. mechanical engineer | " | July 21, 1901 | 70 00 " | |
| Casimir Bourassa | Fireman | " | Feb. 15, 1907 | 50 00 " | |
| <i>Kingston Graving Dock.</i> | | | | | |
| F. S. Roes | Dockmaster | Kingston | Apr. 1, 1897 | 1,400 00 a year | |
| James Gillie | 1st engineer | " | Nov. 1, 1905 | 85 00 a month | |
| Wm. Gregglegan | Fireman | " | July 1, 1892 | 50 00 " | |
| C. Staley | Watchman | " | " 1, 1892 | 50 00 " | |

JOS. VINCENT.

LIST
OF
ENGINEERS, ENGINEMEN, FIREMEN AND CARETAKERS
EMPLOYED IN THE
PUBLIC BUILDINGS THROUGHOUT THE DOMINION ON MARCH 31, 1910
DATES OF APPOINTMENT, SALARIES, ETC.

1 GEORGE V., A. 1911

ENGINEERS AND CARETAKERS, PUBLIC BUILDINGS.

STATEMENT showing the Names, &c., of the Engineers, Enginemen, Firemen, Caretakers, Hoist Attendants and Watchmen employed at Dominion Public Buildings on March 31, 1910.

| Place. | Building. | Name. | Date of Birth. | Position. | Date of Appointment. | Monthly Salary. | Time Employed each year. | Yearly Salary. |
|--------------|------------------------------|--------------------|----------------|-----------------|----------------------|-----------------|--------------------------|----------------|
| | | | | | | \$ cts. | | \$ cts. |
| Aniherst. | Post office | J. H. Chapman | Jan. 3, 1846 | Caretaker. | Sept. 1, 1901 | 33 33 | 12 months. | 400 00 |
| Antigonish | Public building | J. C. Fraser | May 31, 1847 | " | Oct. 1, 1907 | 33 33 | 12 " | 400 00 |
| Annapolis | Post office and custom house | John McKay | Oct. 26, 1847 | " | April 1, 1891 | 33 33 | 12 " | 400 00 |
| Arichat | Public building | Mrs. A. DeRoche. | June 30, 1868 | " | May 5, 1905 | 12 50 | 12 " | 150 00 |
| Baddeck. | " | D. F. McKenzie | May 29, 1848 | " | Jan. 21, 1899 | 29 83 | 12 " | 250 00 |
| Bridgewater | " | Thos. Cokoon. | Jan. 9, 1853 | " | " | 33 33 | 12 " | 400 00 |
| Canso | " | R. Sutherland | Dec. 23, 1855 | " | Oct. 12, 1907 | 33 33 | 12 " | 400 00 |
| Dartmouth. | " | I. C. Henley | " 11, 1846 | " | May 22, 1894 | 29 83 | 12 " | 250 00 |
| Digby | " | F. Dennison | Nov. 8, 1841 | " | Mar. 14, 1902 | 33 33 | 12 " | 400 00 |
| Glace Bay | " | Mrs. J. A. Currie. | Nov. 26, 1844 | " | Dec. 20, 1902 | 50 00 | 12 " | 600 00 |
| Guysborough | Dominion building | W. G. Hadley | Aug. 15, 1894 | Engineer. | May 2, 1906 | 4 16 | 12 " | 50 00 |
| Halifax | " | Richard Power | Dec. 8, 1860 | Fireman. | Oct. 1, 1871 | 62 50 | 12 " | 750 00 |
| " | Custom house | J. DeYoung | April 16, 1860 | Asst. caretaker | Nov. 28, 1904 | 50 00 | 12 " | 600 00 |
| " | Dominion building | J. F. Sullivan | May, — | Watchman | July 1, 1892 | 16 00 | 12 " | 200 00 |
| " | Drill hall. | J. Delaney | Feb. 26, 1852 | Engineer. | Jan. 6, 1906 | 39 00 | 8 " | 468 00 |
| " | Armouries. | John Crowell | Mar. 26, 1857 | Fireman | Dec. 13, 1901 | 50 00 | 12 " | 600 00 |
| " | Examining warehouse | R. Morrison | Dec. 30, 1850 | Caretaker | Mar. 4, 1893 | 50 00 | 12 " | 600 00 |
| " | Immigrant building | M. O'Neil | April 17, 1856 | Fireman | Oct. 2, 1897 | 55 00 | 12 " | 660 00 |
| " | New custom house. | John O'Leary | Dec. 3, 1857 | Engineer. | Feb. 2, 1897 | 50 00 | 12 " | 790 00 |
| " | " | J. Barnes | April 21, 1854 | Fireman | Jan. 28, 1907 | 50 00 | 12 " | 600 00 |
| " | " | G. Selig. | Oct. 8, 1860 | " | April 26, 1907 | 37 50 | 12 " | 450 00 |
| Inverness | Public building | F. Warner | Jan. 22, 1857 | Caretaker. | May 1, 1907 | 33 33 | 12 " | 400 00 |
| Kentville | " | J. R. McLennan | April 30, 1864 | " | Mar. 20, 1908 | 33 33 | 12 " | 400 00 |
| Liverpool | " | W. Hiltz | June 5, 1835 | " | Nov. 14, 1900 | 33 33 | 12 " | 400 00 |
| Lunenburg | " | James Clements | Dec. 13, 1840 | " | June 27, 1900 | 33 33 | 12 " | 400 00 |
| New Glasgow. | Post office | N. Myra | July 16, 1825 | " | Aug. 1, 1906 | 33 33 | 12 " | 400 00 |
| North Sydney | Public building | J. A. Green | Feb. 18, 1836 | " | Oct. 31, 1897 | 37 50 | 12 " | 450 00 |
| Pictou | Post office and custom house | Jas. Arbluckle | Sept. 5, 1849 | " | Dec. 29, 1896 | 50 00 | 12 " | 600 00 |
| Stirling | Post office | J. A. Watt | Nov. 25, 1857 | " | Jan. 1, 1903 | 33 33 | 12 " | 400 00 |
| Sydney Mines | Public building | C. McMillan | Jan. 4, 1850 | " | Jan. 13, 1905 | 33 33 | 12 " | 400 00 |
| Sydney South | Post office and custom house | Mrs. M. Keefe | May 17, 1837 | " | April 1, 1897 | 33 33 | 12 " | 400 00 |
| Truro. | " | Alex. P. Smith. | " | " | " | 33 33 | 12 " | 400 00 |

SESSIONAL PAPER No. 19

| | | | | | | | | |
|---------------|----------|-------------------|----------------|------------------|-------|----------|----------|--------|
| Westville | " | J. P. Collins | Jan. 14, 1865 | " | July | 5, 1909 | 33 33 12 | 400 00 |
| Windsor | " | J. A. Musker | Nov. 16, 1841 | " | Feb. | 13, 1899 | 33 33 12 | 400 00 |
| Yamouth | " | W. H. Whelan | Dec. 23, 1841 | " | Mar. | 1, 1890 | 33 33 12 | 400 00 |
| Charlottetown | P. E. I. | W. H. McKenzie | May 12, 1836 | " | Nov. | 1, 1895 | 50 00 12 | 600 00 |
| " | " | E. Cameron | Nov. 2, 1853 | Messenger | Jan. | 24, 1898 | 41 07 12 | 500 00 |
| " | " | M. A. Allen | Aug. 4, 1855 | " | Jan. | 24, 1898 | 50 00 12 | 600 00 |
| " | " | P. McKenna | Oct. 24, 1841 | Watchman | May | 27, 1909 | 50 00 12 | 600 00 |
| " | " | A. D. McPhee | Apr. 24, 1866 | Caretaker | Aug. | 27, 1909 | 6 25 12 | 75 00 |
| " | " | H. L. Pearson | Aug. 11, 1859 | " | Dec. | 8, 1906 | 13 33 12 | 160 00 |
| " | " | Thos. Shea | Sept. 25, 1850 | " | Sept. | 1, 1897 | 29 16 12 | 350 00 |
| " | " | A. McSwain | Sept. 25, 1846 | " | Mar. | 26, 1906 | 33 33 12 | 400 00 |
| " | " | J. H. Doucet | July 16, 1846 | " | Sept. | 13, 1907 | 33 33 12 | 400 00 |
| " | " | W. Storry | Sept. 15, 1863 | " | Mar. | 27, 1895 | 33 33 12 | 400 00 |
| " | " | C. Johnston | May 18, 1856 | " | Sept. | 15, 1908 | 25 00 12 | 300 00 |
| " | " | J. C. Leonard | April 11, 1859 | " | Nov. | 26, 1890 | 33 33 12 | 400 00 |
| " | " | Wm. Gould | Jan. 1, 1853 | " | July | 1, 1900 | 33 33 12 | 400 00 |
| " | " | L. Yaxxa | Dec. 18, 1843 | " | Dec. | 23, 1903 | 12 50 12 | 150 00 |
| " | " | G. W. Foster | Feb. 2, 1838 | " | Jan. | 11, 1886 | 37 50 12 | 400 00 |
| " | " | E. B. Hicks | Jan. 11, 1882 | " | Oct. | 23, 1886 | 33 33 12 | 400 00 |
| " | " | Patrick Keating | Mar. 13, 1840 | " | Feb. | 1, 1904 | 33 33 12 | 400 00 |
| " | " | J. Murray | Aug. 16, 1880 | " | Oct. | 23, 1886 | 60 00 12 | 720 00 |
| " | " | Neil J. Morrison | July 25, 1838 | Eng. & caretaker | April | 27, 1894 | 60 00 12 | 600 00 |
| " | " | Christopher White | Nov. 20, 1844 | Fireman | Nov. | 9, 1885 | 45 03 12 | 510 00 |
| " | " | J. T. Logan | Sept. 1, 1882 | Asst. Fireman | Dec. | 23, 1908 | 50 00 12 | 600 00 |
| " | " | James A. Paul | Aug. 1, 1837 | Caretaker | Oct. | 13, 1891 | 50 00 12 | 720 00 |
| " | " | James Wolfe | Mar. 10, 1850 | Engineer | Dec. | 1, 1853 | 50 00 12 | 600 00 |
| " | " | Edward Hancy | Feb. 22, 1849 | Host attendant | Nov. | 27, 1882 | 55 00 12 | 600 00 |
| " | " | A. E. Thael | May 14, 1845 | Caretaker | Nov. | 6, 1907 | 50 00 12 | 600 00 |
| " | " | H. R. Garrity | Sept. 6, 1877 | Asst. caretaker | April | 16, 1910 | 33 33 12 | 400 00 |
| " | " | Jas. Gray | Sept. 6, 1877 | Fireman | Dec. | 12, 1908 | 50 00 12 | 600 00 |
| " | " | Samuel Topping | April 2, 1839 | Caretaker | May | 23, 1857 | 41 65 12 | 500 00 |
| " | " | Mrs. N. Dryden | June 21, 1840 | " | Mar. | 26, 1901 | 33 33 12 | 400 00 |
| " | " | P. Arsenau | May 19, 1869 | Fireman | Dec. | 24, 1908 | 40 00 12 | 480 00 |
| " | " | B. Brileau | July 10, 1886 | " | Jan. | 10, 1909 | 30 00 12 | 360 00 |
| " | " | John Gray | May 28, 1838 | Caretaker | Mar. | 7, 1910 | 41 67 12 | 500 00 |
| " | " | A. W. Fields | Mar. 25, 1852 | Fireman | Oct. | 11, 1906 | 50 00 12 | 600 00 |
| " | " | V. Lapointe | Dec. 27, 1859 | Caretaker | Jan. | 3, 1905 | 33 33 12 | 400 00 |
| " | " | A. Bourgeau | Jan. 23, 1876 | " | April | 9, 1904 | 8 33 12 | 100 00 |
| " | " | T. F. Bisson | May 23, 1848 | " | Feb. | 3, 1903 | 10 00 12 | 120 00 |
| " | " | G. A. Bias | Sept. 24, 1870 | " | Dec. | 4, 1907 | 40 00 12 | 480 00 |
| " | " | Israel Baldwin | Nov. 16, 1889 | " | June | 27, 1889 | 33 33 12 | 400 00 |
| " | " | S. Wright | June 25, 1806 | " | Feb. | 4, 1909 | 33 33 12 | 400 00 |
| " | " | A. Paré | April 27, 1842 | " | June | 5, 1902 | 33 33 12 | 400 00 |
| " | " | J. Belanger | Jan. 19, 1876 | " | Jan. | 30, 1906 | 25 00 12 | 300 00 |
| " | " | W. D. Raymond | Jan. 19, 1847 | " | April | 14, 1905 | 33 33 12 | 400 00 |
| " | " | J. A. Beauchemin | May 1, 1892 | " | May | 12, 1903 | 25 00 12 | 300 00 |
| " | " | J. H. Brown | Oct. 7, 1851 | " | Mar. | 27, 1902 | 16 66 12 | 200 00 |
| " | " | J. T. Madore | Dec. 1, 1843 | " | " | 8, 1900 | 12 50 12 | 150 00 |
| " | " | A. Carlot | Dec. 20, 1869 | " | May | 7, 1907 | 40 00 12 | 480 00 |
| " | " | A. Ratelle | Dec. 29, 1845 | " | Sept. | 1, 1897 | 33 33 12 | 400 00 |

1 GEORGE V., A. 1911

STATEMENT showing the Names, &c., of the Engineers, Firemen, Caretakers, Hoist Attendants and Watchmen employed at Dominion Public Buildings on March 31, 1910—Continued.

| Place. | Building. | Name. | Date of Birth. | Position. | Date of Appointment. | Monthly Salary. | Time Employed each year. | Yearly Salary. |
|---------------|----------------------|----------------------|----------------|--------------------|----------------------|-----------------|--------------------------|----------------|
| | | | | | | \$ cts. | | \$ cts. |
| Knowlton.... | P. Q. | F. A. Knowlton.... | June 10, 1855 | Caretaker | June 12, 1909 | 12 50 | 12 months | 150 00 |
| Lachine.... | " | P. O. Robert.... | Sept. 7, 1846 | " | Jan. 26, 1899 | 8 33 | 12 " | 100 00 |
| Lachine.... | " | D. Jos. | Oct. 10, 1857 | " | April 28, 1909 | 33 33 | 12 " | 400 00 |
| Lachine.... | " | Jos. Brisson.... | Nov. 11, 1869 | " | Nov. 22, 1901 | 12 50 | 12 " | 150 00 |
| L'Assomption. | " | E. Dumoulong.... | Aug. 11, 1874 | " | Feb. 22, 1901 | 25 00 | 12 " | 300 00 |
| Levis.... | " | C. Lamontagne.... | Dec. 28, 1850 | " | Mar. 17, 1908 | 33 33 | 12 " | 400 00 |
| Longueuil.... | " | F. X. Masle.... | May 12, 1856 | " | " 16, 1906 | 25 00 | 12 " | 300 00 |
| Magog.... | " | N. Lacasse.... | June 16, 1869 | " | July 1, 1909 | 33 33 | 12 " | 400 00 |
| Mon. real. | " | J. T. Murphy.... | May 6, 1865 | Foreman engin'r | Mar. 2, 1883 | 108 33 | 12 " | 1,300 00 |
| Montreal.... | Examining warehouse. | M. Boyer.... | May 18, 1848 | Fireman.... | Mar. 4, 1882 | 60 00 | 12 " | 720 00 |
| " | " | Art. Lesieur.... | June 22, 1868 | Hoist attendant. | April 18, 1905 | 50 00 | 12 " | 600 00 |
| " | " | Jos. Forges.... | May 15, 1874 | Fireman.... | Nov. 2, 1904 | 50 00 | 12 " | 600 00 |
| " | " | Joe. Langevin.... | Mar. 10, 1850 | " | Oct. 18, 1904 | 50 00 | 12 " | 600 00 |
| " | " | A. Nuttall.... | Feb. 15, 1872 | Electrician.... | June 1, 1905 | 65 00 | 12 " | 780 00 |
| " | " | J. B. Desjardins.... | Jan. 21, 1863 | Cleaner.... | Jan. 26, 1907 | 45 00 | 12 " | 540 00 |
| " | " | Samuel Lanctot.... | June 28, 1850 | " | Nov. 23, 1905 | 45 00 | 12 " | 540 00 |
| " | " | P. Prudhomme.... | Mar. 7, 1854 | Hoist attendant | Mar. 19, 1906 | 50 00 | 12 " | 600 00 |
| " | " | R. Barthele.... | July 12, 1863 | " | May 1, 1906 | 50 00 | 12 " | 600 00 |
| " | " | G. Labelle.... | May 14, 1871 | " | Sept. 12, 1904 | 50 00 | 12 " | 600 00 |
| " | " | S. McGarry.... | June 15, 1873 | " | " 12, 1904 | 50 00 | 12 " | 600 00 |
| " | " | J. Neville.... | Mar. 18, 1879 | " | " 12, 1904 | 50 00 | 12 " | 600 00 |
| " | " | A. Marchand.... | June 15, 1856 | " | Oct. 7, 1904 | 50 00 | 12 " | 600 00 |
| " | " | A. Drouin.... | June 14, 1868 | " | Nov. 28, 1904 | 50 00 | 12 " | 600 00 |
| " | " | Ald. Desjardins.... | Sept. 3, 1859 | Cleaner.... | June 30, 1905 | 45 00 | 12 " | 540 00 |
| " | " | F. Nudon.... | June 15, 1847 | " | Dec. 15, 1902 | 48 00 | 12 " | 576 00 |
| " | " | A. Tremblay.... | April 12, 1862 | Night fireman.... | Oct. 25, 1907 | 50 00 | 8 " | 400 00 |
| " | " | A. Barrette.... | Aug. 28, 1873 | Hoist attendant. | July 21, 1908 | 60 00 | 12 " | 720 00 |
| " | " | James Quinn.... | July 4, 1857 | Freight hoist att. | July 2, 1908 | 50 00 | 12 " | 600 00 |
| " | Post office. | F. Grosin.... | Oct. 12, 1885 | Asst. engineer.... | Jan. 1, 1895 | 60 00 | 12 " | 720 00 |
| " | " | A. Langevin.... | May 12, 1885 | Asst. engineer.... | April 2, 1907 | 50 00 | 12 " | 600 00 |
| " | " | L. D. Thibault.... | Jan. 28, 1861 | Electrician.... | Dec. 15, 1905 | 70 00 | 12 " | 840 00 |
| " | " | F. X. Lafabvre.... | Dec. 13, 1859 | Asst. electrician | June 28, 1905 | 65 00 | 12 " | 780 00 |
| " | " | Oscar Renaud.... | June 14, 1869 | Night " " | Feb. 2, 1907 | 65 00 | 12 " | 780 00 |
| " | " | I. Trudeau.... | Jan. 27, 1863 | Caretaker.... | Oct. 1, 1902 | 50 00 | 12 " | 600 00 |
| " | " | Oscar Renaud.... | Feb. 19, 1862 | Elevator man.... | Sept. 10, 1898 | 50 00 | 12 " | 600 00 |

SESSIONAL PAPER No. 19

[illegible]

1 GEORGE V., A. 1911

STATEMENT showing the Names, &c., of the Engineers, Enginemen, Firemen, Caretakers, Hoist Attendants and Watchmen employed at Dominion Public Buildings on March 31, 1910.

| Locality. | Building. | Name. | Date of birth. | Position. | Date of Appointment. | Monthly Salary. | Time Employed each Year. | Yearly Salary. |
|----------------------------|----------------------|---------------------------|----------------|--------------------|----------------------|-----------------|--------------------------|----------------|
| | | | | | | \$ cts. | | \$ cts. |
| Sherbrooke..... | P. Q. | O. Desève..... | Aug. 6, 1848 | Caretaker..... | April 2, 1898 | 33 33 | 12 months.. | 400 00 |
| St. Paul..... | Post office..... | C. Robitaille..... | Jan. 22, 1848 | " | Sept. 1, 1897 | 40 00 | " | 480 00 |
| St. Henri..... | " | A. G. A. Bissonnette..... | May 25, 1858 | " | Mar. 2, 1895 | 43 33 | " | 520 00 |
| St. Hyacinthe..... | Public building..... | J. Girouard..... | Sept. 16, 1838 | " | Aug. 2, 1895 | 33 33 | " | 400 00 |
| " | Inland revenue..... | E. Chapin..... | April 3, 1844 | " | July 12, 1894 | 33 33 | " | 400 00 |
| " | Drill hall..... | N. Laugelier..... | Sept. 10, 1841 | Fireman..... | Sept. 17, 1907 | 50 00 | " | 600 00 |
| " | Custom house..... | L. Farrant..... | Jan. 21, 1849 | Caretaker..... | April 14, 1897 | 29 16 | " | 350 00 |
| St. Jean..... | Post office..... | W. Brousseau..... | Aug. 12, 1840 | " | Mar. 25, 1909 | 25 83 | " | 340 00 |
| St. Jérôme..... | Public building..... | J. Savard..... | Oct. 24, 1839 | " | Sept. 1, 1900 | 33 33 | " | 400 00 |
| St. Louis du Mile End..... | Post office..... | M. A. Campeau..... | Mar. 6, 1846 | " | May 28, 1905 | 33 33 | " | 400 00 |
| Toronto..... | Public building..... | N. Sasseville..... | Jan. 29, 1844 | " | Jan. 2, 1905 | 25 00 | " | 300 00 |
| Thieford Mines..... | Post office..... | J. Roussau..... | Dec. 22, 1859 | " | July 1, 1905 | 12 50 | " | 150 00 |
| Three Rivers..... | Public building..... | Ph. Gravelle..... | June 3, 1828 | " | Feb. 1, 1891 | 50 00 | " | 600 00 |
| Valleyfield..... | Drill hall..... | A. Pothier..... | Sept. 25, 1807 | Fireman..... | Mar. 20, 1907 | 50 00 | " | 600 00 |
| Victoria..... | Public building..... | J. B. Laniel..... | Oct. 20, 1862 | Caretaker..... | Feb. 13, 1905 | 33 33 | " | 400 00 |
| Alexandria..... | " | G. Beaudet..... | Feb. 20, 1862 | " | Mar. 8, 1904 | 6 25 | " | 75 00 |
| Almonte..... | Post office..... | D. K. McDonald..... | July 4, 1847 | " | Oct. 17, 1906 | 41 66 | " | 500 00 |
| Amherstburg..... | Post office..... | P. Burns..... | Jan. 28, 1861 | " | Sept. 1, 1907 | 33 33 | " | 400 00 |
| Arnprior..... | Public building..... | Mrs. R. Elliott..... | Dec. 28, 1854 | " | June 6, 1905 | 33 33 | " | 400 00 |
| Barrie..... | Post office..... | R. Tsai..... | Oct. 16, 1845 | " | Dec. 1, 1909 | 33 33 | 12 | 400 00 |
| Beaufort..... | " | E. Sivigny..... | Mar. 19, 1847 | " | May 1, 1903 | 33 33 | 12 | 400 00 |
| Brookville..... | " | C. F. Gray..... | April 28, 1861 | " | April 2, 1908 | 37 50 | 12 | 450 00 |
| Brantford..... | Public building..... | John Square..... | Aug. 15, 1863 | " | Oct. 27, 1890 | 50 00 | 12 | 600 00 |
| Bridgeburg..... | " | Wm. Hanna..... | Jan. 13, 1850 | " | " | 25 00 | 12 | 300 00 |
| Bowmanville..... | Post office..... | W. W. Allin..... | Aug. 26, 1857 | " | Feb. 10, 1905 | 33 33 | 12 | 400 00 |
| Belleville..... | " | S. Haight..... | Aug. 26, 1857 | " | Jan. 24, 1901 | 50 00 | 12 | 600 00 |
| Berlin..... | " | J. Clements..... | June 21, 1840 | " | May 15, 1890 | 33 33 | 12 | 400 00 |
| Brampton..... | " | J. Foster..... | Sept. 16, 1846 | " | Aug. 1, 1896 | 33 33 | 12 | 400 00 |
| Carleton Place..... | " | Wm. F. Halpenny..... | April 17, 1858 | " | May 18, 1892 | 25 00 | 12 | 300 00 |
| Chatham..... | Armoury..... | Jas. W. Mitchell..... | May 25, 1848 | Fireman..... | Jan. 7, 1885 | 41 66 | 12 | 500 00 |
| Cornwall..... | Post office..... | T. W. Stephenson..... | Oct. 9, 1864 | Caretaker, &c..... | Oct. 9, 1906 | 33 33 | 12 | 400 00 |
| Cayuga..... | " | R. Conroy..... | Feb. 6, 1848 | " | Sept. 1, 1897 | 50 00 | 12 | 600 00 |
| Clinton..... | " | G. A. Gibson..... | May 29, 1861 | " | Sept. 8, 1891 | 4 16 | 12 | 50 00 |
| " | " | J. Scott..... | Jan. 21, 1861 | " | Feb. 9, 1904 | 16 66 | 12 | 200 00 |

SESSIONAL PAPER No. 19

| | | | | | | | |
|------------------------------|---|-----------------|--------------------|----------------|----------------|----------|----------|
| Cobourg | " | Public building | J. Staples | June 3, 1834 | Dec. 10, 1866 | 33 33 12 | 400 00 |
| Deerston | " | " | W. Hart | Jan. 1, 1862 | July 1, 1903 | 33 33 12 | 400 00 |
| Dundas | " | " | Wm. Graham | Dec. 5, 1853 | " | 4 16 12 | 50 00 |
| Fort William | " | " | D. J. McAllum | April 5, 1831 | Sept. 21, 1903 | 37 50 12 | 450 00 |
| Galt | " | " | T. Barrett | June 17, 1861 | " | 33 33 12 | 40 00 |
| Georh | " | " | G. McCleod | July 30, 1865 | May 25, 1901 | 41 60 12 | 500 00 |
| Goderich | " | " | G. Bissett | April 14, 1861 | Sept. 1, 1897 | 33 33 12 | 400 00 |
| Hamilton | " | " | Alfred Barnard | Dec. 27, 1847 | Dec. 10, 1894 | 33 33 12 | 600 00 |
| " | " | " | J. Wigglesworth | Aug. 2, 1863 | Oct. 2, 1896 | 60 00 12 | 720 00 |
| " | " | " | Thomas Nicholson | Dec. 17, 1857 | Mar. 2, 1887 | 60 00 12 | 600 00 |
| " | " | " | A. Geo. Andrews | May 11, 1877 | Mar. 5, 1909 | 60 00 12 | 600 00 |
| Armoory | " | " | A. Marland | Sept. 22, 1857 | Aug. 7, 1906 | 33 33 12 | 400 00 |
| Public building | " | " | John McDonald | June 30, 1841 | Nov. 20, 1900 | 33 33 12 | 400 00 |
| " | " | " | John J. Link | May 19, 1891 | Dec. 7, 1901 | 33 33 12 | 400 00 |
| Royal Military College | " | " | T. Harrison | Aug. 21, 1875 | May 1, 1902 | 50 00 12 | 600 00 |
| Armoory | " | " | F. Forsythe | Nov. 15, 1896 | Feb. 11, 1904 | 50 00 12 | 1900 00 |
| Royal Military College | " | " | Wm. Hazlett | May 27, 1874 | Nov. 20, 1900 | 85 00 12 | 1,020 00 |
| " | " | " | J. Quigley | Oct. 30, 1857 | June 1, 1903 | 55 00 12 | 650 00 |
| " | " | " | M. Redmond | Mar. 2, 1867 | Jan. 29, 1902 | 50 00 12 | 100 00 |
| Post office | " | " | L. Cochran | Mar. 1, 1870 | Electrician | 45 00 12 | 780 00 |
| " | " | " | Jas. Kelso | June 21, 1873 | May 15, 1905 | 48 33 12 | 580 00 |
| Inland revenue building | " | " | J. Lawless | May 23, 1860 | Feb. 8, 1908 | 33 33 12 | 400 00 |
| " | " | " | P. Clark | Sept. 4, 1857 | Nov. 1, 1909 | 15 00 12 | 180 00 |
| Custom house | " | " | M. Mulken | Oct. 12, 1859 | Sept. 18, 1888 | 50 00 12 | 600 00 |
| " | " | " | Wm. Greer | Dec. 4, 1861 | Mar. 16, 1884 | 33 33 12 | 400 00 |
| Post office | " | " | J. Gilbanks | Mar. 29, 1852 | May 31, 1906 | 41 66 12 | 500 00 |
| " | " | " | W. Service | Jan. 23, 1871 | Oct. 7, 1906 | 50 00 12 | 680 00 |
| Drill hall | " | " | J. E. Rose | May 29, 1873 | Nov. 2, 1908 | 60 00 12 | 720 00 |
| Post office and custom house | " | " | Wm. J. Healey | April 12, 1864 | Nov. 10, 1908 | 33 33 12 | 400 00 |
| Public building | " | " | Chas. Wales | July 12, 1846 | Aug. 9, 1909 | 50 00 12 | 600 00 |
| Public building | " | " | Mrs. C. E. Webster | April 12, 1846 | Oct. 4, 1900 | 33 33 12 | 400 00 |
| " | " | " | R. Gott | May 27, 1855 | Mar. 28, 1907 | 33 33 12 | 400 00 |
| " | " | " | L. A. Gauthier | May 15, 1867 | June 13, 1908 | 33 33 12 | 400 00 |
| " | " | " | D. McPherson | April 30, 1851 | July 15, 1900 | 33 33 12 | 400 00 |
| " | " | " | John Fawley | Mar. 14, 1844 | Nov. 1, 1898 | 29 16 12 | 350 00 |
| " | " | " | A. Beale | Sept. 28, 1850 | Dec. 11, 1903 | 33 33 12 | 400 00 |
| Observatory | " | " | A. Villeneuve | Mar. 11, 1857 | Dec. 14, 1904 | 55 00 12 | 600 00 |
| " | " | " | G. Sparks | Oct. 16, 1858 | Nov. 1, 1904 | 65 00 12 | 780 00 |
| Public building | " | " | H. Wright | Nov. 24, 1841 | Mar. 18, 1908 | 33 33 12 | 400 00 |
| " | " | " | Sam Lee | Oct. 24, 1841 | July 7, 1902 | 33 33 12 | 400 00 |
| Inland revenue building | " | " | G. Church | Nov. 15, 1864 | Jan. 5, 1910 | 33 33 12 | 400 00 |
| Post office | " | " | G. Stenton | Sept. 17, 1847 | Dec. 2, 1908 | 33 33 12 | 400 00 |
| Custom house | " | " | Wm. Taylor | Nov. 25, 1850 | Jan. 26, 1860 | 25 00 12 | 300 00 |
| Post office | " | " | James Shaw | June 11, 1842 | Sept. 12, 1904 | 33 33 12 | 400 00 |
| Public building | " | " | D. Williams | Feb. 8, 1850 | April 11, 1902 | 33 33 12 | 400 00 |
| " | " | " | D. McKenzie | Sept. 12, 1843 | May 14, 1906 | 33 33 12 | 400 00 |
| Post office | " | " | Wm. Armstrong | Jan. 9, 1846 | June 11, 1888 | 29 16 12 | 300 00 |
| " | " | " | Jos. Curtis | 1844 | May 1, 1905 | 33 33 12 | 400 00 |
| " | " | " | R. Birks | 6, 1822 | May 1, 1869 | 33 33 12 | 400 00 |
| Public Building | " | " | R. Sim | Feb. 10, 1839 | " | 33 33 12 | 400 00 |

1 GEORGE V., A. 1911

STATEMENT showing the Names, &c., of the Engineers, Enginemen, Firemen, Caretakers, Hoist Attendants and Watchmen employed at Dominion Public Buildings on March 31, 1910 — *Concluded.*

| Place. | Building. | Name. | Date of Birth. | Position. | Date of Appointment. | Monthly Salary. | Time Employed each year. | Yearly Salary. |
|------------------------|-------------------------|-----------------------|----------------|-------------------|----------------------|-----------------|--------------------------|----------------|
| | | | | | | \$ cts. | | \$ cts. |
| Sandwich | Public Building | John McLeod | Sept. 14, 1883 | Caretaker | July 22, 1907 | 25 00 | 12 months | 300 00 |
| Sarnia | " | J. H. Dyble | Aug. 25, 1860 | " | Nov. 7, 1903 | 33 33 | 12 " | 400 00 |
| Sault Ste. Marie | " | P. J. Racine | Sept. 23, 1865 | " | Sept. 25, 1905 | 33 33 | 12 " | 400 00 |
| Smiths Falls | " | R. W. Lewis | Aug. 19, 1863 | " | Jan. 8, 1896 | 33 33 | 12 " | 400 00 |
| Stratford | Post office, &c. | J. P. Murray | July 29, 1850 | Engineer | " 26, 1900 | 50 00 | 12 " | 600 00 |
| " | Armouries | J. A. Carey | " 4, 1856 | Fireman | Nov. 24, 1907 | 50 00 | 12 " | 600 00 |
| " | Armouries | W. Peel | Nov. 22, 1847 | Engineer | Dec. 12, 1904 | 33 33 | 12 " | 400 00 |
| St. Catharines | Post office, &c. | A. Clark | Sept. 14, 1850 | Caretaker | Mar. 16, 1908 | 33 33 | 12 " | 400 00 |
| " | Public building | W. Hoyt | May 25, 1857 | " | April 14, 1903 | 33 33 | 12 " | 400 00 |
| " | " | G. Eaton | " 12, 1840 | " | Oct. 25, 1890 | 33 33 | 12 " | 400 00 |
| St. Mary's | " | Wm. J. Johnston | April 14, 1838 | " | April 10, 1902 | 100 00 | 12 " | 1,200 00 |
| St. Thomas | Dominion building | H. E. Hamilton | Sept. 22, 1852 | Foreman, engine r | Jan. 13, 1891 | 50 00 | 12 " | 600 00 |
| Strathroy | Inland revenue building | C. H. Bailie | Sept. 22, 1874 | Foreman | Oct. 16, 1906 | 60 00 | 12 " | 720 00 |
| Toronto | Custom house | H. Drinkwine | Oct. 4, 1856 | " | Aug. 18, 1901 | 55 00 | 12 " | 660 00 |
| " | " | Ed. Switzer | " 1862 | Hoist attendant | Dec. 18, 1906 | 50 00 | 12 " | 600 00 |
| " | Examining warehouse | T. J. Enright | Feb. 10, 1844 | Engineer | " 28, 1874 | 75 00 | 12 " | 900 00 |
| " | " | James Cosgrove | Sept. 26, 1864 | Fireman | Sept. 23, 1886 | 65 00 | 12 " | 780 00 |
| " | " | Ed. Appleton | " 1, 1867 | " | May 25, 1907 | 55 00 | 12 " | 660 00 |
| " | " | J. Jennings | Mar. 26, 1875 | Hoist attendant | Sept. 29, 1907 | 55 00 | 12 " | 660 00 |
| " | " | R. C. Cusack | Jan. 8, 1859 | " | Sept. 1, 1903 | 55 00 | 12 " | 660 00 |
| " | " | F. Simpson | Nov. 10, 1853 | Watchman | April 4, 1902 | 55 00 | 12 " | 660 00 |
| Toronto | Examining warehouse | Thos. Jones | Nov. 26, 1872 | Watchman | June 1, 1905 | 2 00 | p. d. | 730 00 |
| " | Union station | Wm. Scott | Nov. 16, 1868 | Hoist attendant | Oct. 31, 1901 | 55 00 | 12 months | 660 00 |
| " | " | J. Gormally | Sept. 16, 1868 | Elevatorman | Sept. 28, 1905 | 45 00 | 12 " | 540 00 |
| " | Postal station "C" | W. P. Murphy | Feb. 17, 1864 | Caretaker | Jan. 12, 1884 | 45 00 | 12 " | 540 00 |
| " | Post office | James Rae | April 8, 1855 | Engineer | Oct. 9, 1897 | 40 00 | 12 " | 480 00 |
| " | " | J. Somers | May 2, 1862 | Fireman | May 8, 1906 | 60 00 | 12 " | 720 00 |
| " | " | F. Cassidy | " 1858 | " | Jan. 10, 1907 | 60 00 | 12 " | 720 00 |
| " | " | T. Letray | March 16, 1840 | " | Oct. 16, 1896 | 65 00 | 12 " | 780 00 |
| " | " | W. J. Graham | July 18, 1847 | Caretaker | Feb. 3, 1905 | 45 00 | 12 " | 540 00 |
| Toronto | Drill hall | J. Downs | Oct. 11, 1849 | " | Mar. 25, 1895 | 60 00 | 12 " | 720 00 |
| " | " | Richard Eyre | Aug. 8, 1867 | " | Oct. 4, 1898 | 70 00 | 12 " | 840 00 |
| " | " | D. Glonna | Sept. 4, 1858 | " | July 14, 1908 | 35 00 | 12 " | 420 00 |
| Trenton | Public building | G. Robinson | May 13, 1844 | " | Aug. 31, 1889 | 35 00 | 12 " | 420 00 |
| Walkerton | " | David Allan | Jan. 21, 1861 | " | May 12, 1905 | 33 33 | 12 " | 400 00 |
| Windsor | Post office | Mrs. T. Gibson | Oct. 26, 1843 | Engineer | Dec. 24, 1897 | 50 00 | 12 " | 600 00 |
| " | " | L. Belleperche | " | " | " | 50 00 | 12 " | 600 00 |

SESSIONAL PAPER No. 19

| | | | | | | | | | | | | |
|---|---|---|------------------|-------|----------|-----------------|-------|----------|----|----|----|----------|
| " | " | " | W. Curtis | Mar. | 6, 1844 | Caretaker | Nov. | 9, 1890 | 33 | 33 | 12 | 400 00 |
| " | " | " | W. Wheeler | Sept. | 26, 1874 | Engineer | Jan. | 9, 1905 | 50 | 00 | 12 | 200 00 |
| " | " | " | P. Fisher | Dec. | 12, 1852 | Caretaker | Nov. | 19, 1906 | 15 | 06 | 12 | 200 00 |
| " | " | " | Robert Kerr | June | 6, 1864 | Engineer | Dec. | 11, 1901 | 37 | 50 | 12 | 450 00 |
| " | " | " | Jas. Brown | May | 23, 1862 | Fireman | May | 19, 1908 | 50 | 00 | 12 | 600 00 |
| " | " | " | T. Giles | Mar. | 30, 1843 | " | Aug. | 1, 1897 | 65 | 00 | 12 | 750 00 |
| " | " | " | H. Somerville | June | 8, 1872 | Caretaker | Dec. | 4, 1900 | 45 | 00 | 12 | 540 00 |
| " | " | " | John Stevens | Jan. | 10, 1863 | " | Nov. | 1, 1909 | 55 | 00 | 12 | 600 00 |
| " | " | " | J. S. Telfer | July | 25, 1840 | Fireman | July | 1, 1904 | 45 | 00 | 12 | 540 00 |
| " | " | " | W. Kidd | May | 11, 1879 | " | Mar. | 1, 1908 | 55 | 00 | 12 | 600 00 |
| " | " | " | J. A. S. Chausse | Aug. | 20, 1867 | " | Oct. | 1, 1908 | 55 | 00 | 12 | 600 00 |
| " | " | " | W. Harrington | Sept. | 18, 1871 | " | Sept. | 29, 1908 | 60 | 00 | 12 | 720 00 |
| " | " | " | Jos. Hay | May | 4, 1853 | Engineer | July | 20, 1905 | 80 | 00 | 12 | 960 00 |
| " | " | " | J. Saunders | Oct. | 25, 1848 | Fireman | Nov. | 23, 1908 | 60 | 00 | 12 | 720 30 |
| " | " | " | Wm. Clark | Oct. | 8, 1868 | " | July | 1, 1908 | 60 | 00 | 12 | 720 00 |
| " | " | " | N. Thompson | Feb. | 10, 1874 | Elevatorman | July | 10, 1908 | 60 | 00 | 12 | 720 00 |
| " | " | " | A. R. Bush | Mar. | 18, 1872 | " | July | 15, 1909 | 60 | 00 | 12 | 720 00 |
| " | " | " | F. Jenkins | Feb. | 21, 1874 | " | July | 10, 1908 | 60 | 00 | 12 | 720 00 |
| " | " | " | Thos. McMaighan | Oct. | 10, 1879 | " | Nov. | 23, 1908 | 60 | 00 | 12 | 720 00 |
| " | " | " | John Lamb | Nov. | 6, 1849 | Caretaker | May | 16, 1908 | 60 | 00 | 12 | 720 00 |
| " | " | " | A. H. Latour | Mar. | 25, 1876 | Electrician | Sept. | 16, 1908 | 60 | 00 | 12 | 1,080 00 |
| " | " | " | E. L. Campbell | Sept. | 18, 1882 | " | Sept. | 15, 1909 | 80 | 00 | 12 | 960 00 |
| " | " | " | M. McInvor | Nov. | 12, 1867 | Fireman | Oct. | 13, 1909 | 40 | 00 | 12 | 720 00 |
| " | " | " | Joseph Coutu | May | 16, 1843 | Hist attendant | March | 16, 1887 | 55 | 00 | 12 | 660 00 |
| " | " | " | A. Boteau | Sept. | 23, 1860 | Night watchman | April | 4, 1905 | 60 | 00 | 12 | 720 00 |
| " | " | " | P. Johnson | May | 31, 1881 | Caretaker | Oct. | 19, 1901 | 40 | 00 | 12 | 720 00 |
| " | " | " | G. K. Williams | April | 15, 1862 | Fireman | Oct. | 25, 1904 | 45 | 00 | 12 | 540 00 |
| " | " | " | Wm. Johnson | June | 14, 1867 | Carpenter | Sept. | 1, 1907 | 75 | 00 | 12 | 900 00 |
| " | " | " | J. G. Adamson | May | 21, 1872 | Caretaker | June | 6, 1905 | 75 | 00 | 12 | 900 00 |
| " | " | " | W. T. Madden | April | 27, 1839 | Elevatorman | April | 27, 1908 | 50 | 00 | 12 | 600 00 |
| " | " | " | J. L. Sience | Mar. | 30, 1873 | Caretaker | Sept. | 13, 1908 | 75 | 00 | 12 | 900 00 |
| " | " | " | E. G. Henry | Nov. | 3, 1859 | " | Mar. | 9, 1907 | 75 | 00 | 12 | 900 00 |
| " | " | " | R. L. Hasckill | Sept. | 18, 1877 | Asst. caretaker | Oct. | 20, 1909 | 70 | 00 | 12 | 840 00 |
| " | " | " | S. Neveas | May | 3, 1862 | Elevatorman | Nov. | 22, 1909 | 60 | 00 | 12 | 720 00 |
| " | " | " | Ed. Cummings | Feb. | 7, 1876 | Caretaker | Dec. | 14, 1909 | 45 | 00 | 12 | 540 00 |
| " | " | " | W. C. Norman | Feb. | 23, 1884 | " | Dec. | 4, 1908 | 70 | 00 | 12 | 840 00 |
| " | " | " | Alex Keith | Feb. | 12, 1853 | " | July | 20, 1905 | 55 | 00 | 12 | 660 00 |
| " | " | " | S. M. Bannerman | July | 27, 1856 | " | June | 25, 1909 | 16 | 05 | 12 | 200 00 |
| " | " | " | W. A. Douglass | Feb. | 27, 1856 | " | June | 25, 1909 | 16 | 05 | 12 | 200 00 |
| " | " | " | R. West | Sept. | 12, 1855 | " | Sept. | 21, 1906 | 50 | 00 | 12 | 600 00 |
| " | " | " | R. D. Robertson | Aug. | 18, 1877 | " | Jan. | 15, 1906 | 75 | 00 | 12 | 900 00 |
| " | " | " | F. Ferdinand | Jan. | 17, 1867 | Fireman | Jan. | 1, 1910 | 40 | 00 | 12 | 720 00 |
| " | " | " | T. Jackson | June | 28, 1879 | " | Jan. | 18, 1909 | 50 | 00 | 12 | 600 00 |
| " | " | " | W. J. Gore | July | 22, 1863 | Caretaker | May | 6, 1901 | 50 | 00 | 12 | 600 00 |
| " | " | " | T. Perkins | Sept. | 14, 1852 | " | Sept. | 24, 1906 | 50 | 00 | 12 | 600 00 |
| " | " | " | John Malcolmson | Nov. | 9, 1857 | " | Sept. | 5, 1908 | 60 | 00 | 12 | 720 00 |
| " | " | " | W. H. Howell | Dec. | 15, 1864 | " | Dec. | 24, 1908 | 75 | 00 | 12 | 900 00 |
| " | " | " | J. A. Fraser | Jan. | 1, 1851 | " | Jan. | 26, 1901 | 12 | 50 | 12 | 150 00 |
| " | " | " | John Porters | Sept. | 22, 1865 | " | Sept. | 6, 1909 | 50 | 00 | 12 | 600 00 |
| " | " | " | R. H. McEwan | Dec. | 13, 1857 | " | Jan. | 21, 1910 | 70 | 00 | 12 | 840 00 |

1 GEORGE V., A. 1911

STATEMENT showing the Names, &c., of the Engineers, Firemen, Caretakers, Hoist Attendants and Watchmen employed at Dominion Public Buildings on March 31, 1910—*Continued.*

| Place. | Building. | Name. | Date of Birth. | Position. | Date of Appointment. | Monthly Salary. | Time Employed each year. | Yearly Salary. |
|------------------|---------------------------|--------------------|----------------|----------------|----------------------|-----------------|--------------------------|----------------|
| | | | | | | \$ cts. | months | \$ cts. |
| Kanloops. | Post office. | J. R. McNabb. | Sept. 6, 1852. | Caretaker | Sept. 19, 1905 | 50 00 | 12 | 600 00 |
| Lady Smith. | " | Robt. Bell | Feb. 29, 1846 | " | April 1, 1909 | 50 00 | 12 | 600 00 |
| Nanaimo. | Public building. | J. Thompson | Sept. 2, 1836 | " | May 1, 1897 | 60 00 | 12 | 720 00 |
| Nelson. | " | B. B. Smith | Sept. 12, 1845 | " | Mar. 9, 1903 | 50 00 | 12 | 600 00 |
| New Westminster. | Post office | L. Thornber. | April 4, 1846 | " | July 11, 1905 | 50 00 | 12 | 600 00 |
| " | Indian, &c., building | A. H. Oakley | April 26, 1851 | " | Feb. 2, 1909 | 50 00 | 12 | 600 00 |
| Roseland. | Post office | H. McQuade | Dec. 18, 1851 | " | Aug. 1, 1905 | 50 00 | 12 | 600 00 |
| Vancouver. | New public building. | A. J. Chisholm | April 18, 1851 | " | Oct. 1, 1903 | 50 00 | 12 | 600 00 |
| " | Examining warehouse. | F. Powers | Mar. 21, 1839 | Watchman | Feb. 10, 1910 | 50 00 | 12 | 600 00 |
| " | Old post office | Jas. Watson. | April 29, 1844 | Caretaker | Feb. 28, 1910 | 50 00 | 12 | 600 00 |
| " | New Public Building. | G. Wilson. | June 4, 1836 | Elevatorman. | Oct. 8, 1909 | 60 00 | 12 | 720 00 |
| " | " | Wm. Curran | " | Ass. caretaker | Oct. 29, 1909 | 60 00 | 12 | 720 00 |
| " | " | W. J. Chisholm. | Sept. 18, 1853 | Elevatorman | Feb. 14, 1910 | 60 00 | 12 | 720 00 |
| " | " | Jas. Mulvaney | Dec. 18, 1853 | Ass. caretaker | Mar. 1, 1910 | 60 00 | 12 | 720 00 |
| " | " | John Dunsmuir. | Nov. 16, 1858 | Cleaner | Jan. 10, 1910 | 60 00 | 12 | 720 00 |
| Victoria. | " | D. Inches | Dec. 9, 1856 | Engineer | Feb. 1, 1909 | 80 00 | 12 | 960 00 |
| " | New Dominion Building | Wm. McKay | Dec. 31, 1856 | Caretaker | Feb. 4, 1898 | 50 00 | 12 | 600 00 |
| " | Dominion building. | T. Campbell | June 24, 1848 | " | Oct. 1, 1906 | 60 00 | 12 | 720 00 |
| " | " | W. Dick | June 18, 1854 | Fireman | Oct. 1, 1908 | 53 00 | 12 | 636 00 |
| " | " | W. Robinson | July 4, 1848 | Elevatorman | Sept. 1, 1907 | 60 00 | 12 | 720 00 |
| " | " | F. T. McInroye. | Dec. 24, 1854 | " | Aug. 1, 1907 | 60 00 | 12 | 720 00 |
| " | " | C. Minkles. | June 27, 1852 | Cleaner | Dec. 29, 1909 | 60 00 | 12 | 720 00 |
| " | Old custom house. | Geo. Lyall | Feb. 12, 1843 | Caretaker | May 8, 1909 | 60 00 | 12 | 720 00 |
| " | Old post office. | W. J. Bowden | Mar. 25, 1850 | " | Oct. 1, 1908 | 29 00 | 12 | 348 00 |
| Pawson. | Post office. | E. Lemieux. | Oct. 21, 1881 | Nightman | Sept. 19, 1907 | 160 00 | 12 | 1,920 00 |
| " | " | J. K. Johnston | April 17, 1883 | Caretaker | Oct. 17, 1904 | 160 00 | 12 | 1,920 00 |
| " | Administration building. | C. Ferrie. | Oct. 7, 1887 | Nightman | June 12, 1905 | 160 00 | 12 | 1,920 00 |
| " | " | J. Bantin | Oct. 13, 1876 | Caretaker | Dec. 1, 1901 | 150 00 | 12 | 1,800 00 |
| " | " | Mrs. A. Miner | Sept. 6, 1850 | Charwoman. | Dec. 1, 1901 | 150 00 | 12 | 1,800 00 |
| " | " | S. S. Conner. | Aug. 9, 1853 | Nightman | Sept. 16, 1908 | 160 00 | 12 | 1,920 00 |
| " | " | J. Valentine. | Mar. 16, 1864 | Fireman | Jan. 1, 1907 | 160 00 | 12 | 1,920 00 |
| " | Commissioner's residence. | N. P. McDonald | Oct. 8, 1879 | Caretaker | Dec. 1, 1905 | 160 00 | 12 | 1,920 00 |
| " | " | W. Harkum | Mar. 16, 1848 | Nightman | Oct. 1, 1905 | 160 00 | 12 | 1,920 00 |
| " | " | Mrs. Ida Jotae | April 27, 1858 | Charwoman | Oct. 1, 1908 | 160 00 | 12 | 1,920 00 |
| " | Police court. | J. B. Deslauriers. | July 12, 1875 | Caretaker | June 1, 1906 | 160 00 | 12 | 1,920 00 |
| " | Court house. | H. DeVilliers. | May 7, 1872 | " | May 21, 1902 | 160 00 | 12 | 1,920 00 |
| " | " | J. E. Deslauriers. | Mar. 25, 1873 | Nightman | June 1, 1906 | 160 00 | 12 | 1,920 00 |
| White Horse. | Public building. | C. J. McLennan | Dec. 22, 1850 | Caretaker | Oct. 30, 1902 | 125 00 | 12 | 1,500 00 |

JOS. VINCENT.

OFFICIAL CORRESPONDENCE

DEPARTMENT OF PUBLIC WORKS

FROM

JULY 2, 1867, TO MARCH 31, 1910

SESSIONAL PAPER No. 19

LETTERS Sent from Chief Engineer's office, from January, 1880, to March 31, 1910.

| Year. | — | | Number. |
|-----------|----------------------------------|------------------------|---------|
| 1880..... | From January 10 to June 30 | | 418 |
| 1880..... | " July 1 | " 1881 | 1,795 |
| 1881..... | " " | " 1882 | 2,352 |
| 1882..... | " " | " 1883 | 2,651 |
| 1883..... | " " | " 1884..... | 3,611 |
| 1884..... | " " | " 1885 | 3,119 |
| 1885..... | " " | " 1886 | 2,867 |
| 1886..... | " " | " 1887..... | 3,281 |
| 1887..... | " " | " 1888..... | 3,552 |
| 1888..... | " " | " 1889..... | 4,229 |
| 1889..... | " " | " 1890..... | 3,374 |
| 1890..... | " " | " 1891..... | 3,948 |
| 1891..... | " " | " 1892..... | 4,009 |
| 1892..... | " " | " 1893..... | 4,232 |
| 1893..... | " " | " 1894..... | 3,966 |
| 1894..... | " " | " 1895..... | 4,603 |
| 1895..... | " " | " 1896..... | 4,239 |
| 1896..... | " " | " 1897..... | 4,994 |
| 1897..... | " " | " 1898..... | 4,696 |
| 1898..... | " " | " 1899..... | 5,277 |
| 1899..... | " " | " 1900..... | 7,366 |
| 1900..... | " " | " 1901..... | 4,341 |
| 1901..... | " " | " 1902..... | 6,759 |
| 1902..... | " " | " 1903..... | 4,327 |
| 1903..... | " " | " 1904..... | 5,295 |
| 1904..... | " " | " 1905..... | 5,496 |
| 1905..... | " " | " 1906..... | 8,036 |
| 1906..... | " " | to March 31, 1907..... | 3,771 |
| 1907..... | " April 1 | " 1908..... | 6,456 |
| 1908..... | " " | " 1909..... | 9,275 |
| 1909..... | " " | " 1910..... | 8,236 |

NOTE.—The letters, including returns, received in the Chief Engineer's office may be estimated at the rate of two received to one sent.

1 GEORGE V., A. 1911

LETTERS Received and Sent, Chief Architect's office, from January 1, 1880, to March 31, 1910.

| | | | Received. | Sent. |
|-------------------------------------|---|------------------------|-----------|--------|
| 1880—From January 1 to June 30..... | | | | 1,273 |
| 1880 | " | " 1881..... | | 2,943 |
| 1881 | " | " 1882..... | | 2,859 |
| 1882 | " | " 1883..... | 3,538 | 4,600 |
| 1883 | " | " 1884..... | 3,860 | 6,004 |
| 1884 | " | " 1885..... | 4,500 | 6,718 |
| 1885 | " | " 1886..... | 6,075 | 6,450 |
| 1886 | " | " 1887..... | 6,816 | 6,380 |
| 1887 | " | " 1888..... | 6,947 | 6,870 |
| 1888 | " | " 1889..... | 6,484 | 7,667 |
| 1889 | " | " 1890..... | 7,448 | 6,578 |
| 1890 | " | " 1891..... | | 7,751 |
| 1891 | " | " 1892..... | 6,113 | 4,290 |
| 1892 | " | " 1893..... | 7,428 | 6,453 |
| 1893 | " | " 1894..... | 6,900 | 4,517 |
| 1894 | " | " 1895..... | 7,538 | 5,327 |
| 1895 | " | " 1896..... | 7,843 | 5,783 |
| 1896 | " | " 1897..... | 10,700 | 8,200 |
| 1897 | " | " 1898..... | 10,867 | 8,547 |
| 1898 | " | " 1899..... | 10,913 | 8,762 |
| 1899 | " | " 1900..... | 12,386 | 9,878 |
| 1900 | " | " 1901..... | 12,287 | 9,860 |
| 1901 | " | " 1902..... | 12,560 | 10,330 |
| 1902 | " | " 1903..... | 13,430 | 11,106 |
| 1903 | " | " 1904..... | 14,710 | 15,590 |
| 1904 | " | " 1905..... | 15,000 | 14,300 |
| 1905 | " | " 1906..... | 15,785 | 14,785 |
| 1906 | " | to March 31, 1907..... | 13,768 | 12,087 |
| 1907 | " | April 1 " 1908..... | 17,000 | 16,340 |
| 1908 | " | " 1909..... | 17,353 | 16,755 |
| 1909 | " | " 1910..... | 19,200 | 18,100 |

